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**Weekly Journal**

OF

**MEDICINE AND THE COLLATERAL SCIENCES.**

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# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

**Medicine and the Collateral Sciences.**

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FRIDAY, MARCH 25, 1842.

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## NOTES FROM CLINICAL LECTURES,

*Delivered during the present Session,  
at Univers. Coll. Hospital,*

BY C. J. B. WILLIAMS, M.D., F.R.S.

Professor of the Practice of Medicine,  
and of Clinical Medicine.

SINCE my last clinical lecture, the patient, Thomas Stocks, has died of phthisis; and I will take the opportunity of commenting on all the cases of phthisis, or complicated with pulmonary tubercles, that have come under our notice among the in-patients since the beginning of the session.

Of 98 [patients who have been, or are, under my care since the beginning of Oct., no fewer than 28 (which is one in three and a half) have presented signs of tubercles in the lungs. You may think this a very large proportion; and I have no doubt that it is much larger than the proportion of patients, generally called phthisical, is found to bear in any hospital. But, remember, I number not only the cases of obvious phthisis, but those of other diseases in which there were distinct signs of pulmonary tubercles to any extent. In fact, of this number, 28, at least 13 were cases either of latent phthisis, or of pulmonary tubercles disguised by other diseases, and which, but for their physical signs, we would not pronounce (perhaps not always even suspect) to be tuberculous at all.

On the other hand, you must take into account the fact, that the common obvious cases of phthisis are not generally admitted into the hospital. On account of the commonly incurable and lingering character of pulmonary consumption, patients suffering from it are not considered proper objects for in-door treatment; for, if such were admitted, there would be no room for the subjects of other diseases, which do admit of cure, or at least of relief in a shorter time.

Considering, therefore, that many cases of  
747.—xxx.

phthisis are excluded from the hospital, it must again strike you that our proportion of tuberculous cases is very high. Yet I am convinced, from extensive observation and much reflection on this subject, that tuberculous disease of the lungs, in some degree or another, in one form or another, prevails among the more seriously sick in London, and in other large towns, in as great a proportion as among our patients. So far as our post-mortem examinations have given the opportunity, you have seen verified the statement which you have often heard me make, that of those in large towns who die of various diseases or accidents, above the age of thirty, more than half exhibit in the lungs more or less of tuberculous disease, or of the traces which it leaves behind. It is thus only we can learn the real amount and importance that tuberculous disease bears in the scale of maladies, by regarding it not only in its more acknowledged forms, and attended by its common symptoms, but by aid of careful physical diagnosis, or of the still more minute search of the scalpel, tracing it in all its degrees and combinations, as a secondary lesion and as a primary affection, as an index of the state of the constitution, as well as in the more decided form of an extensive organic disease.

It is by extensive observations and comparisons of this kind that I have been led to entertain the views with regard to tubercle, and the diseases which it produces, which I have given in my lectures at the College, and of which you will find an outline in various works which have been published in the last fourteen years. A fundamental part of these views is, that tubercle is the *plasma* or material with which textures are nourished or repaired, in a degraded state, which may be either *cacoplastic*, when it forms dense, ill-organized, and non-vascular deposits (as in grey tubercle), or *aplastic*, when it is still further devoid of living organization, as in yellow tubercle.

This view, by regarding tubercle as a deviation in degree rather than in kind from

natural processes, and by associating it with the universally operating function of textural nutrition, explains the frequency and mode of its production in such various constitutions, and under such a variety of circumstances, and I think I may add, guides us to the methods of treatment which have been most sanctioned by the most extensive experience.

I shall group together our cases according to their forms or complications; and as we have not time to give the details of each case, I refer you to the reports for these, and shall make a few general remarks on each group.

*Phthisis, simple, or with mere bronchitis.*

Of this class we have only four cases; for this is the unfortunate class that is generally excluded from the hospital. When they are taken in, it is either on account of some recent exacerbation, or simply *misericordias causæ*.

The case of Thomas Stocks, who was admitted October the 12th, and died February the 22d, is one of common constitutional phthisis, in a young man who had lost several brothers and sisters in the complaint, and himself became a victim of one of its most extensive and rather rapid forms. We have kept him in the hospital as a specimen of the ordinary simple form of this disease. You have had the opportunity of watching its steady progress, with its symptoms of cough, with copious muco-purulent expectoration in opaque flocculent masses, extreme shortness of breath, ever frequent pulse, increasing debility, and pallid emaciation, with occasional profuse night sweats, but with little pain or other severe symptom to ruffle the path to the grave. Physical examination too has shown the nature and progress of the disease in the lungs, by irregular dulness of various parts of the chest, particularly the upper; in the defective vesicular breath-sound, and in the loud whiffing, and cavernous breath-sounds, varied occasionally by cavernous and other rhonchi, and becoming more extensive with the consuming advancement of the disease. This patient bore tonics and full diet well; and I have no doubt that these prolonged his ebbing life; whilst the opiates, in various forms, greatly relieved the cough. On some occasions it was necessary to intermit these measures on account of increased dyspnoea, consequent on diminution of the expectoration: under these circumstances relief was afforded by a blister, and the use of an expectorant, consisting of decoction of senega, with ammonia, squill, and conium.

In the post-mortem examination we found the lungs so extensively consolidated by tuberculous deposits, and those of circum-

scribing inflammation, and so pervaded by cavities of all sizes and degrees, that very little natural vesicular texture was left, and it seemed a marvel how life could have been sustained so long; but you must seek for an explanation in the proportionate reduction of all the organic functions; so that life being reduced altogether to a lower scale was sustained with less and less breath. We found universal adhesions agglutinating not only the pleuræ, but also the heart to the pericardium; and as there appears to be no account of a previous attack of pericarditis, the latter must be referred to an extension of the low, latent inflammation, with which tuberculous disease is so commonly associated.

Edward Lester, æt. 35, formerly intemperate, dated the commencement of his chest complaint to a severe cold five years ago, during which he spit blood. He was admitted Dec. the 17th, in an advanced stage of phthisis, with all its symptoms and signs, and was dismissed unrelieved Jan. the 15th. The plan of diffusing iodine and watery vapour through the room was tried with this patient. It produced an effect which often follows from its use, that of diminishing, for a few hours, the cough and the expectoration, but increasing the dyspnoea; and when the cough did return, it was unusually violent, the expectoration more viscid, and tinged with blood.

Richard Ferral, ætat. 40, admitted November 26, a stout man, caught cold from wet feet six months ago, and has coughed ever since, with frothy expectoration occasionally tinged with blood: has gradually lost flesh and strength. Signs of partial consolidation and small cavities under both clavicles; dulness and subcrepitant rhonchus in the posterior part of both lungs. Pulse 80, weak. He was treated by blisters, followed by the turpentine and acetic acid liniment, with nitro-muriatic acid and ben-bane internally. He was much relieved, but on December 10, the expectoration becoming more scanty and difficult, with an increase of dyspnoea, an alkaline expectorant of senega, squill, carb. potass, and conium, was substituted for the acid mixture with much advantage, and he was dismissed December 17, much stronger and with little cough, the breath sound being clearer and free from rhonchus in the lower parts of the lung, and the dulness under the clavicles diminished but not removed.

James Currey, of intemperate habits, admitted February 15, with chronic phthisis, much aggravated by a recent excess at a wake, had, in addition to signs of consolidation in the upper part of both lungs, impaired stroke sound and breath sound, with subcrepitant rhonchus in the lower part of both

lungs. The latter signs, depending on congestion and bronchitis, were removed by repeated blistering, and a mixture containing  $\frac{1}{4}$  grain doses of tartar emetic with conium. The dulness under the clavicles, especially the right, remained on the 25th of February, when he was dismissed, much relieved of the cough and shortness of breath.

The last two cases illustrate very well how much relief the rest and protection of a hospital, as well as the treatment, often afford to the exacerbations which ruffle and hasten the course of the chronic forms of phthisis. These exacerbations generally arise from congestion or inflammation of the air-tubes, or of the pulmonary texture; and if treated in time, are signally relieved by local depletion, blistering, or other modes of counter-irritation, combined in the more inflammatory cases with antimonials internally, and in the more congestive and asthenic, with acid mixtures, or alkaline expectorants, according to the state of the expectoration. So great is the relief in many cases, that the patients often fancy themselves quite cured; and no doubt most of the cases of reputed cures of consumption are of this kind. But physical examination shows that the tuberculous disease, although quiescent, is not removed; and if it do not advance of itself, it only waits for a fresh exposure to cold or undue exertion, or irregularity of diet, or other cause of disorder, to bring back its inflammatory complications, each return of which adds to the mischief, and reduces the strength, until the consumptive disease becomes continued and wholly irremediable. But although a careful and continued observation of these chronic cases shows the error of supposing them to be cured, it shows how much they may be relieved, and life prolonged, both by studying to avoid the causes of the aggravations of the disease, and by treating these aggravations promptly when they do occur.

*Phthisis with pneumonia:—Two cases.*

Jerry Leonard, æt. 43, admitted Nov. 2, of stout make, formerly intemperate. Mother died of a "cough:" 18 out of 19 of his brothers and sisters have died before they were 18 years of age. Five years ago he was laid up for many weeks with pleurisy. Has had a cough for four months, and a fortnight ago this became much worse after his working in a very damp place. Has lost flesh, strength, and appetite. Breath very short, with pain in left chest. Expectoration viscid, mucopurulent, streaked, and partially tinged with blood. Pulse 90, weak but sharp. Rigors and occasional sweats. Dulness over whole left chest, with defective breath sound, and short crepitation in lower and middle parts. Cavernal respiration, without pectoriloquy, under left

clavicle. Pectoriloquy and subcrepitation below right clavicle.

This patient was treated first by blisters and antimonials until the pain was removed and the breathing better. Afterwards, the cough being very violent, and the expectoration difficult, extract of belladonna, and tincture of squilla, and liq. potassæ, gave much relief for a time. The sweats and debility much increasing, sulphuric acid and the sulphate of zinc were substituted for the alkali. This change seemed beneficial at first, but in a few days the expectoration becoming more viscid and rusty, and the breathing more difficult, the alkali was again used with fresh temporary benefit; and decoction of bark was afterwards added. The dulness in the left side was diminished in the middle and lower part, and some breath sound restored; but the disease in the upper regions of the chest had increased, and so had his weakness and emaciation. He left the hospital Jan. 29th.

The other case is that of John Penelli, which I shall pass over, because I have noticed it in a former lecture.

The supervention of extensive pneumonia in a tuberculous subject, constitutes a most serious complication, which, if not treated early, rarely fails to greatly accelerate the fatal termination of the disease. Many cases of acute phthisis, or galloping consumption, are those aggravated by pneumonia. The lungs are then found more or less consolidated by soft deposit, like in hepatization, but the deposit is more grey or stone-coloured, mottled with older tuberculous deposits, and often spotted with incipient excavations or tuberculous softening. The lymph effused is all cacoplastic, susceptible of neither absorption nor organization: it therefore becomes a serious additional cause of pulmonary obstruction and destruction.

Yet these intercurrent inflammations, if treated early, before effusion of lymph takes place, are often quite tractable, yielding to even moderate antiphlogistic measures, such as local depletion and blistering, and especially tartar emetic internally. The mischief is often done before this treatment is applied, because the symptoms of these inflammations are very obscure, and are ascribed to the tuberculous disease, or sometimes to mere weakness. But you should watch every exacerbation in a consumptive patient; and if you find crepitation and increasing dulness in any part of the chest, or rustiness and viscosity of the sputa, it will be prudent to use some of the moderate antiphlogistic means which I have mentioned, proportioning them to the previous strength of the patient. After these signs have been removed, the usual tonic plan may be again pursued.

*Phthisis, with chronic laryngitis.—**Two cases.*

The case of Sarah Hunt was scarcely within the period of the session, having been discharged, apparently convalescent, Sept. 25th. But I notice it in order to point out how tuberculous disease of the lungs is apt to be combined with chronic laryngeal affections. The attack began six weeks before admission (Aug. 26th) with loss of voice, followed by a croupy cough, difficult breathing and deglutition. These symptoms were much relieved by leeching and blistering the throat, ordered by Dr. Taylor in my absence. On my return, I found her without voice, and still complaining of some cough and dyspnoea, and on examining the chest, detected dulness and defective motion of the outer upper part of left chest, with slight mucous rhonchus. The breath-sounds were masked by a rough laryngeal rhonchus. I ordered her sarsaparilla with iodide of potassium internally, and the tincture of acetic acid liniment. In a week, the patient lost the cough and shortness of breath, but she had not recovered her voice, and the dulness remained.

The other case, Cornelius Sullivan, admitted Jan. 5th, was a more obvious case of phthisis, little advanced, with severe chronic laryngitis. He was first put under the antimonial treatment, with blistering, to relieve an aggravation from recent bronchitis; and afterwards the same remedies were used as in the last case, with the addition of the daily application to the throat of a strong solution of the nitrate of silver, after the method of Trousseau and Belloc. He was discharged Jan. 24th, with very little cough, and his voice restored, although still hoarse.

The more I see of chronic laryngeal cases, the more I become convinced that they are combined either with pulmonary tubercles, or with a disposition to their formation.

*Phthisis, with disease of the heart.—**Three cases.*

I have before commented on the case of John Hudson, who was admitted Nov. 9th, for vertigo and palpitation, connected with dyspepsia and hypertrophy of the left ventricle. As he became relieved from these symptoms, we found that he had had a cough for many months; and we found signs of limited consolidation of one lung. The disease was quite chronic, and unfit for hospital treatment.

Edward Pope was admitted November 25, in an advanced stage of phthisis, under the symptoms of which he had been suffering for three years; and he died January 29. We could not obtain an examination of the body, on account of the objections of the relations. In addition to the ordinary

symptoms of advanced phthisis, he suffered much from occasional attacks of spasmodic dyspnoea and palpitation, which were sometimes relieved by extracts of stramonium and belladonna, or ether and tincture of lobelia. In the fits of palpitation, the pulse at the wrist was innumerable, but by listening to the heart could be easily counted as many as 216 in the minute. Once, whilst we were examining him, the pulsations suddenly slackened down to 100. This is often observed with palpitation. There were signs of enlargement of the heart; the patient had formerly suffered from rheumatic fever.

Elizabeth Freethy also had disease of the heart, originating in repeated attack of rheumatism, and her late symptoms have compelled me to count her among the tuberculous subjects. The heart affection is dilated hypertrophy, causing extended dulness and impulse, and a slight disease of the aortic orifice, indicated by a slight fling murmur at midsternum, not heard below the left breast. I shall have to notice this case under another head.

Disease of the heart is not a common complication with the worst forms of phthisis; in fact, experience has led me to consider hypertrophy of the heart as a favourable circumstance in a case of phthisis; persons having this combination generally exhibiting more power to resist the progress of the tuberculous disease, which consequently becomes circumscribed and chronic. In the most rapid cases of consumption, we often find the heart smaller than usual; and in these the weak pulse and feeble circulation corresponded with their speedy sinking.

The complication with hypertrophy often, however, carries with it an increased tendency to pulmonary congestion and hæmorrhage, and may require more of local depletion and sedative treatment than is expedient in other cases of limited tubercle of the lungs.

*Phthisis, with Rheumatism, Sciatica, &c.—Six Cases.*

I have just adverted to the case of Freethy, who has been twice under my care for an obstinate form of rheumatism, from former attacks of which the heart is permanently damaged. This constant disposition to the recurrence of rheumatism shows something to be very wrong in the constitution. Probably, as Dr. Prout supposes, the chief fault is in the function of secondary assimilation, which is imperfectly performed, and leads to the undue formation of lactic acid or some analogous morbid matter, which is the immediate cause of the rheumatic pains and inflammation. The same cause in time may injure the nutritive material of the blood, and lead to its deposit in a degraded or cacoplastic state; and thus, according to my view, may be formed. The

first symptoms of pulmonary tubercle in the case of Freethy appeared during her stay in the hospital after an attack of feverish sore-throat and catarrh with hepatic congestion. She spat a bloody fluid, which was at first supposed to proceed from the throat; but as the spitting continued, and was accompanied with more cough and pain in the chest, this region was carefully examined; and we found general slight dulness on the right side, with a breath-sound defective in loudness and duration. The disease proceeded in spite of general and local depletions, various counter-irritants, and other remedies; and a month after (February 8), it is reported that the dulness had become more marked, the breath and voice-sound had become tubular under the right clavicle, and slight spitting of blood still continued. On Feb. 9, the catamenia, which had been absent for two periods, appeared; and the chest symptoms were diminished, but not removed. She was then able to bear cascarrilla with nitric acid, which improved her strength, and she was discharged February 21. I have no doubt that ere long the phthisical disease will run its course in this patient, for the constitution is much impaired, and she is continually suffering from various disorders.

In the five other cases, the tuberculous disease of the lungs was more advanced, but limited, and therefore chronic.

James Padger, æt. 62 (admitted September 22, discharged relieved, October 15), suffered from lumbago, and recent bronchitis, of which he was soon relieved; but there was dulness and cavernous breath and voice-sounds under one or both clavicles, with emphysema of the lower lobes of the lungs; a common combination in chronic phthisia.

Edward Robinson (admitted December 18, discharged January 5), came in for chronic rheumatism in the legs, which soon yielded to treatment with iodide of potassium. But he likewise had a long-standing cough, and there were dulness, and cavernous breath and voice-sounds, under the right clavicle, with emphysematous resonance on percussion in the lower region of the chest, down almost to the margin of the ribs.

John Ryan (admitted February 15, discharged February 23), was admitted for rheumatic gout, affecting the ankles and wrists, and other small joints, particularly the right wrist and hand, which was much swollen, and very red and tender. The gouty affection subsided entirely in a few days, under the use of colchicum. But we found signs of a cavern, with partial consolidation at the apex of the right lung; and he stated that he had long suffered from cough, and had lately become very thin. The cough rather increased when the gouty swelling subsided.

Ann Mitchell (admitted January 10,

discharged February 8), was affected with a large and very painful swelling of the right knee, with effusion chiefly in the bursæ. She had also the symptoms of phthisis, with signs of cavities at the apex of both lungs. The inflammation of the knee was cured by leeches, followed by an iodine liniment, with the internal use of iodide of potassium. Her chest symptoms were relieved by blistering and rubefacients, and her strength improved with the use of the iodide of iron.

John Herring, admitted February 26, is still (March 3,) in the hospital, with severe sciatica and signs of tubercles of both lungs, with recent catarrh. He has been treated with colchicum and antimonials, with blistering to the chest, and cupping and a liniment for the hip, and is much relieved.

This number of cases of combined tuberculous and rheumatic or allied affections, seems to point out some real connection between the two diseases. Last summer, some of you may remember that we had several cases of pulmonary tubercle combined with granular disease of the kidney, the frequent connection of which with rheumatism is well known. It is very possible that the pulmonary disease may, in some of these cases, arise from the cachexia connected with imperfect excretion of urine; but I believe the cause of this imperfect excretion, the granular degeneration of the kidney, to be in itself allied to tubercle and analogous caco-plastic products.

## ILLUSTRATIONS

OF THE

### **PATHOLOGY, DIAGNOSIS, & TREATMENT OF OPHTHALMIC AFFECTIONS.**

By EDW. HOCKEN, M.D. M.R.C.S.L. &c.

[Continued from p. 833 of last vol.]

*Definition of granular conjunctiva: forms of the complaint; the symptoms, causes, pathology, and treatment.*

GRANULAR conjunctiva might, with more propriety, be spoken of as *granular inflammation of the conjunctiva*, inasmuch as the condition of the membrane is always to be considered but a part and portion of severe and prolonged inflammation of that tunic, and as never existing distinct from that process. If their inseparable existence be but clearly understood, it will lead to a right comprehension of the pathology of the affection, and scientific plans of treatment. The term "granular" is applicable, from the clearness



with which it conveys to the mind an idea of the appearance of the conjunctiva—a roughened, irregular surface, from the presence of minute elevations or granules; not implying any relationship to the process of granulation in ulcers, from which it differs in every point of view, but simply referring to the obvious characters I have mentioned.

*Definition.*—Hence my definition of granular inflammation is the following:—A severe and prolonged inflammation of the palpebral portion of the conjunctiva, of either active or passive characters, attended by a gradually augmenting and extending papillary roughness or inequality of surface; being of a bright scarlet colour; the granular elevations small, firm, and highly vascular, in active cases, and attended with great intolerance of light, lachrymation, and pain, in advanced stages. In the passive forms, the granulations are large, soft, and dark coloured; there is a secretion of watery mucus, and little pain or irritation is experienced.

I have selected extremes to illustrate my meaning, inasmuch as here, as in all other cases, the contrast must be made in them, the intervening chasm being filled up, in nature, by every intermediate grade. No arbitrary limitations exist in nature, but all is indivisible and connected: there are no abrupt terminations and commencements between this or that law, this or that disease, or the varieties of some one affection; they pass into one another gradually and imperceptibly, and only present a striking contrast in their extremes. We shall not be surprised, therefore, at meeting with cases in which distinctive features, either active or passive, do not exist, and some where the condition is exceedingly mild and slight.

What I understand by active and passive must be explained before I proceed: it involves no theory whatever of the pathology of inflammation. I mean to assert that inflammation may assume either an active or a passive form in any organ, from either constitutional or local causes, or from the specific nature of the exciting agent, being distinguished from each other by constitutional and local symptoms. In the active form there is bright scarlet vascularity, tension, pain, heat, actively

disturbed functions, and pulsation; in the passive dark purple, or livid discoloration, distension of vessels without pulsation, considerable swelling and relaxation; rarely tension, rarely much heat or pain. The constitutional symptoms in the first case are those of synocha, or inflammatory fever; in the second, either depression and derangement of the general health without fever, or a type of fever below the standard of inflammatory, with every intermediate grade, to complete prostration of strength and typhus. It will be obvious that, in this sense, the terms active and passive denote only the *character* of the inflammation, and hence have no reference whatever to its *duration*. I restrict the terms acute and chronic to the *duration* of the disease, and in like manner, as in the former instance, mean to denote no *character* it may possess; for however slow an inflammation may be, it may still be active in its characters, or however rapid, it may still be a passive affection. If all practitioners understood these differences, and used the terms in the foregoing sense, as they should do, no confusion could result, but rather the reverse. Mr. Lawrence's remarks\* on the varieties of inflammation, at the beginning of his work on the "Diseases of the Eye," prove how much a definite meaning attached to these terms is required, since that justly-celebrated surgeon evidently labours under a misapprehension of their true signification when he says, "We read and hear of active, passive, or atonic, of sthenic and asthenic inflammations. Believing inflammation to be increased activity or exertion of the capillaries, I consider the expressions passive, atonic, and asthenic inflammation, as applied to the state of the inflamed part, to be contradictory in terms." Speaking of acute and chronic, the same gentleman has previously remarked (82), "Severity of symptoms and rapidity of progress characterise the former; the opposite attributes of mildness and slowness belong to the latter"; whilst it will be obvious to every one who has faithfully observed nature, that mere duration has nothing to do with the character of the complaint†.

\* Treatise on Diseases of the Eye, 2d ed. p. 83.

† Instead of contending about the presence or absence of increased action, or of weakness in

The forms under which we observe granular inflammation of the conjunctiva correspond with these obvious differences in the types of inflammation generally; but inasmuch as the change, constituting the true form of the disease, requires time for its formation, so in like manner is its progress slow, and its removal a work of time, however judiciously treatment may be timed and adapted. Bearing these facts in mind, it will be obvious that acute and chronic bear but a relative meaning in the present case; the disease is always chronic, but the progress and effects of some cases are much more rapid than others, and hence bear to each other the relative relation of acute and chronic. The grand distinction is between active and passive forms, which differ most materially both in their local and constitutional symptoms, and the treatment which relieves and cures them. The more active cases generally coincide with the more acute, whilst the passive are generally the most chronic. I shall consider them in this relation in my following remarks.

*Symptoms.*—In the active forms of the affection, after some severe inflammation of the palpebral conjunctiva has continued for some time, the severity of the symptoms having been subdued by treatment, an obstinate and intractable chronic form of the same disease remaining, whether the primary affection of the conjunctiva has been induced by the repeated and unscientific introduction of highly irritating or caustic substances between the lids, or Egyptian, or some other form of purulent ophthalmia, a severe sense of roughness and rubbing on the ball of the eye is complained of on any of its motions, the eye waters, its vessels fill, and a severe sense of distress and pain is experienced, rendering the eyes almost useless: this is what the patient

the capillaries, it would be much more to the purpose if we considered the actual combination of morbid phenomena which constitutes inflammatory orgasm. Lesions of innervation and circulation are always combined, and the consequences are lesions of nutrition, whether the primary aberration from the natural condition of nervous state be from the condition of the blood, or originate in causes acting on the nervous system, and secondarily affecting the blood-vessels and blood.

The characters of an inflammation, when of sufficient extent, determine the phenomena of the constitutional disturbance; still, very acute, if not active inflammations, may progress during great prostration, or a typhoid condition of the system.

calls weakness of the eyes. If, in this stage, we invert the lids, we find the changes of granulation to have commenced in that portion of the conjunctiva which is reflected from the globe to the lids, at the angle of its reflection, commencing in the upper lid, and always progressing more rapidly, and with more severity, there, than in the similar situation of the lower one. The granulations are small, more or less conical, firm, very vascular, and of a bright scarlet colour; the conjunctiva oculi, opposed to these, vascular and scarlet; the lids swollen and vascular; there is intolerance of light, and lachrymation.

As the disease proceeds, the symptoms increase in severity, and constitutional ones become superadded. The irregular prominences of the conjunctiva extend on the lids, advancing upon the palpebral surface towards the edges of the lids, but never in the contrary direction, the whole surface becoming eventually crowded with small, firm prominences, more or less conical; many of them, however, very rough and irregular, and some larger than others. These are, of course, (in the natural condition of the lid, presenting a concave surface towards the globe) much crowded, and in close apposition, but on inverting the lid they are separated from one another, and their shapes are more clearly discernible. Whilst the disease has proceeded so as to cover the inner surface of the upper eyelid completely, it generally happens that the lower one is not more than half covered, and by no means so thickly as the upper: a fact which holds good in every form of the complaint. But the progress and completion of these changes in the conjunctiva are not only attended with the mere local symptoms of inflammation and change of structure, but, in addition, those which result from the substitution of a beautifully smooth and soft membrane, gliding over the cornea and conjunctiva oculi, by a rough, inflamed, and thickened membrane. We may thus understand how changes in appearance and function of the conjunctiva oculi, and the transparent continuity of tissue over the cornea, are invariable consequences and attendants of this disease, giving rise to many of the most formidable and painful symptoms, those chiefly noticed by the pa-



tient, and almost characteristic. The perpetual irritation (morbid disturbance) of these parts, leads to great distension of their vessels, and chronic inflammation of their structure; it becomes thickened, highly sensitive, and very vascular; the anterior corneal layer becomes slightly opaque: a few large scarlet trunks with several small diverging branches ramify in its structure: these increase in number in proportion to the activity of the affection, with a proportionate increase in the thickening and opacity of the tissue, till at length, in an advanced stage, it resembles a scarlet cloth, immediately investing the cornea, and hence termed *pannus*.

During the progress of these affections the following symptoms are present: great intolerance of light, so that the patient is quite unable to open the eye in a brilliantly lighted apartment, and spasmodic closure of the lid by the *orbicularis palpebrarum*, powerfully impeding an examination of the organ; profuse lachrymation from any stimulus, and under the same circumstances as previously mentioned; a gummy mucous secretion, which glues the lids together during the night, and which may be seen covering the granulations themselves.

The patient complains of very severe burning pain in the eyes, with the sensation of sand and roughness; weight over the brows, and frequently general headache, and, from the opacity, intolerance of light, and blephorospasmus, almost complete loss of use of the organs. A chronic febrile condition of the constitution accompanies the more active cases, denoted by a hard pulse, impaired digestion, dry skin, and nocturnal chills followed by heat and thirst. I have seen heat of skin and thirst habitually present.

*Passive type.*—In the passive forms of the complaint, the symptoms are much less severe, and more slow in their effects. It commences and progresses in the same way, and in the same manner, as I have already explained; but the irregularities of surface are much larger, much softer, smooth, but irregular in shape, of a dark or sometimes very pale livid colour, and bathed in a profuse watery mucous secretion. The effects of such mechanical irritants on the surface of the globe is much less severe than in

the former instance; the conjunctiva becomes eventually thickened and loaded with dark-coloured vessels, and the front of the cornea irregular and semi-opaque; but there is comparatively little pain, no lachrymation, little, if any, intolerance of light or spasmodic closure of the lids. In many of these cases, the whole structure of the lids is œdematous, of a dark colour, and loaded with vessels.

In all these patients the general health is greatly deranged: there may be fever of a hectic form present, or a simply deranged and depressed constitution. We find the tongue loaded, the breath offensive, the digestion disturbed, the bowels irregular, the skin dry and harsh, perspirations partial and offensive, the urine unnatural, with other similar phenomena. In some cases, the signs of anæmia are present, such as pallor of the countenance, lips, lining of the mouth, and general surface, jerking pulse, &c. &c., with many of the other indications of impaired health I have mentioned.

I have never seen ulceration of the cornea, sloughing, or the formation of staphyloma, produced in any form of the complaint, but an alteration in the condition of the membrane and tarsal cartilage may remain after the cure of the other symptoms, occasioning entropion, which may require subsequent operative treatment. The duration is very uncertain, but in general it is a disease of years or months rather than weeks.

*Causes.*—One of my main objects in communicating this paper at this time, is to dwell somewhat on an occasional cause of this most afflicting malady, and to warn others from the too indiscriminate employment of highly irritating or caustic applications to the conjunctiva. The most fruitful source undoubtedly is some variety or other of purulent ophthalmia, but any cause capable of producing and maintaining for some time a highly inflamed condition of this membrane, may originate the disease. I have watched five or six cases within the last two or three years, which have originated solely in the unscientific, indiscriminate, injudicious, and repeated use of the nitrate of silver, either as a saturated solution, or in substance. They have commenced with some trifling conjunctival affection—a little pain or roughness,

which the patients disregarded until they accidentally passed some Eye Infirmary, or called on some medical attendant of the family in which they were servants; but in all the cases I have alluded to they each and all of them positively denied having suffered from anything more than slight pricking, redness, and feeling of sand in the eye, until they had become the victims of practice—which they themselves termed “hot drops,” and which, when placed between the lids, caused them most dreadful suffering, generally lasting for some hours, after each application. A few condensed notes of two or three of these cases may prove that I am not in the slightest degree exaggerating their truth.

*Active acute granular inflammation of the conjunctiva, occasioned by the indiscriminate employment of the nitrate of silver.*

Mary Gibson, æt. 45, a full, powerful, healthy-looking woman, was admitted under the care of Mr. Lawrence, in St. Bartholomew's Hospital, in the month of January, 1841. She stated, that she had always been of healthy and active habits, and had rarely suffered from any previous indisposition, being quite well until the December of 1839. In the early part of this month she found her eyes rather weak, and complained of something under the lids; but altogether it was so very trifling that she took little notice about it. In the course of the month, finding that the eyes remained “weak,” she applied at an Eye Infirmary, and had something put into her eyes which occasioned the most violent burning pain, lasting for two or three hours, and attended with profuse lachrymation and spasmodic closure of the lids. Her eyes now became so bad that she was obliged to attend frequently, and at each attendance the burning drops were again introduced; invariably being followed by the paroxysm of agony, lasting for two or even three hours. About the end of the month, her eyes were so intolerant of light, watered so profusely, and pained her so much, that she was, to all intents and purposes, blind; and has continued nearly in the same condition ever since, being sometimes better and sometimes worse. Finding that she was invariably worse after every attendance at the Eye In-

firmary, she discontinued to attend; but not before she found that every motion of the eyeball under the lid produced so severe a sense of sand under the lid that it was almost unbearable. In this truly pitiable condition, she applied to a Dispensary, where, after undergoing various treatment, and finding she received no benefit, she continued a patient some time, but eventually forsook this also. She then became a patient of a private practitioner, but having exhausted all her means, she gladly embraced the opportunity of becoming an in-patient at St. Bartholomew's Hospital, under Mr. Lawrence, in Jan. 1841, being in no better condition than she was a year previously.

On her admission we found the lids greatly swollen and vascular; the conjunctiva oculi and front of the cornea thickened, opaque, and of a light scarlet colour; the conjunctiva of both lids crowded with small, firm, highly vascular irregularities; the lids were firmly and spasmodically closed, and very profuse lachrymation was excited on every attempt to examine the organs. She complained of very severe burning pain in the organs, and sense of roughness, weight, and oppression, over the brows, and frequent headache. She had nocturnal fever, dry skin, loaded tongue, disturbed digestion, and general feeling of illness. Mr. Lawrence freely scarified the vascular lids, which bled profusely; leeches were liberally applied around the organs, and an antiphlogistic regimen was adopted. These measures were had frequent recourse to during the nine or ten months she remained in the hospital, and almost invariably with temporary relief; but during that period she several times got much better for a few weeks or days, and then as suddenly became again worse. Several local applications were used during this period. The liquor plumbi seemed to give relief, and shortly afterwards was manifestly injurious. Dilute vinum opii was alternated with solutions of alum, and seemed beneficial when first employed; but no one remedy could be depended on for any length of time. At one period the condition of the lids, and other symptoms, improved so much, that there was every prospect of her recovery; but she again relapsed, and it was not without much difficulty that

the affection again took a favourable turn. Continuing to improve in the autumn of 1841, she was discharged during a favourable period much benefited. How long it was to continue as a permanency was doubtful.

I will now allude to a case of the passive type originating from the same cause.

*Passive granular inflammation of the conjunctiva, connected with feeble general powers and anæmia, brought on by the local application of the nitrate of silver.*

Charles Pendrill, æt. 50, a pale cachectic-looking man, was admitted into St. Bartholomew's, under the care of Mr. Lawrence, in October, 1840. The account he gave of himself was, that he was a gentleman's servant, in the capacity of porter; was in very good health, but that having to open the gates one cold wet night, he caught a slight "cold" in his eye. By his master's orders he applied at an eye infirmary, in which that gentleman was a governor, and where, to use the patient's words, "hot drops were put into his eyes until he lost his sight." He stated that the invariable effect of these "hot drops" was to occasion him severe burning pain in the organ, lasting for two or three hours. In a comparatively short period his eyes became so bad, that he was quite unfitted for any employment; and as they continued to get worse and worse every time he attended, he called at the private residence of the surgeon, who looked at his eyes, said they were very bad, and that he would "touch them up for him;" accordingly they were well "touched up" with nitrate of silver in substance, which greatly increased his former symptoms. The left organ was first affected, speedily followed by the right. Besides the local application of a saturated solution of the nitrate of silver to the organs, tartar emetic was administered internally.

On his admission he enjoyed no useful degree of vision: his lids were crowded with soft, flabby granulations, which secreted a watery mucus; his conjunctivæ oculi thickened, and traversed by dark-coloured vessels; the fronts of the corneæ looked uneven, were dull and opaque, and somewhat vascular; his look was pale and cachectic, and his secretions and excretions were

greatly deranged. His lids were scarified, and astringents were judiciously alternated in solution to the conjunctiva. He was greatly benefited by hospital regimen, and these curative proceedings in some months time, but subject to relapses from very slight causes. Once or twice he was readmitted, and again discharged; the last time in the summer of 1841, when, although his eyes were better, he presented more definite symptoms of anæmia, viz. general pallor, lips and lining of mouth blanched, pulse feeble and jerking. Mr. Lawrence, by my advice, gave iron internally with the most beneficial effects; he rapidly improved in all respects, and was shortly afterwards discharged cured.

*Pathology.*—I shall dwell but little on the intimate nature of the disease: it is essentially inflammatory, has an inflammatory origin, and is caused by the same means which relieve that morbid process and its consequences. Of course it has not the remotest connexion with the granulations of ulcers, for such never spring from a sound surface, nor does it ever depend on enlargement of the meibomian follicles, since, as I have already mentioned, it always commences in, and spreads from, the reflection of the conjunctiva to the lids, where these follicles are absent. There appears to me to be more truth in the statement of its dependence on enlargement of the conjunctival papillæ; partly from the engorgement of vessels, and partly from the deposition of lymph interstitially; and hence, from such a belief, my views on treatment will not appear inconsistent.

*Treatment.*—There are many men who take a very partial and local view of disease, and are very fond of an exclusively local treatment; I cannot connect myself with these, although a judicious employment of local remedies, when combined with their constitutional use, are, in my opinion, far preferable to either separately. In the active forms of this complaint, a suitably active treatment should be pursued, in accordance with the general powers and peculiarities; cupping from the back of the neck, and the application of leeches around the organs, should be employed with the activity and frequency which the case may suggest. Again, the bleeding may be performed locally, by dividing the ves-

sels concerned, most freely scarifying the conjunctiva of the lids in all directions, and shaving off the granulations level with the surface; the lid should be fully inverted, whilst this is performed with a lancet. And here let me state, that the mere shaving off of the inequalities by no means insures a cure; for as long as the inflammation, on which the disease depends, remains unsubdued, the granulations are reproduced. If the operation be performed skilfully, it leaves no inequality of surface, by occasioning depressions, after the disease is cured.

The treatment which I should recommend, in conjunction with these measures, has never been proposed, or used by any one else, as far as I am aware, and yet it appears to me to recommend itself as obviously in this as in any other inflammation connected with the deposition and organization of lymph; I mean the moderate and constitutional action of mercury, quietly introduced into the system until it slightly affects the gums, &c., and then continued in sufficient quantity to maintain its influence.

In passive types, scarification of the diseased membrane is generally useful, but its employment must be determined by its effects.

Astringent applications to the conjunctiva are valuable remedial measures, but they require adaptation to render them useful. A very dilute solution of the plumb. acet., ij. grs. to the ʒj. of aqua rosæ, is best suited to the active acute cases, and the undiluted liq. plumbi to the more passive; managing the intermediate forms according to their character. We find that these remedies, although at first beneficial, frequently lose their effect from long use, and hence require to be alternated, with some degree of tact, with other astringents, as alum, vinum opii., cup. sulph. &c. In some of the very mild cases, nothing more is required than to invert the lids, and to rub the granulations with the sulph. cupri, keeping the lid inverted for some minutes after its use, and repeating the application at intervals.

In all the forms of this complaint, we must bear in mind that the condition of the constitution must be attended to, and its derangements treated appropriately, according whether it be above or below par, deranged and de-

pressed, or its condition disturbed by any morbid poison, paying especial attention to the secretions and excretions.

15, Southampton-street, Covent-garden.

## CASE OF VIOLENT HYSTERIA IN A MAN.

By ALFRED SMEE, F.R.S.,

Surgeon to the General Dispensary, Aldersgate Street; Surgeon to the Bank of England, &c.

(For the London Medical Gazette.)

ON last Christmas-day twelvemonth, I was suddenly aroused from the merriment peculiar to the season, by being informed that one of the Bank porters was in a violent fit. On repairing to the spot, I found a man lying perfectly insensible, surrounded by nearly twenty persons, from whom I could only learn that he had suddenly fallen into that state; and these appeared to be certain that he had not been drinking to excess. What, then, was the cause of the insensibility? was it from poisoning? was it from apoplexy? was it from epilepsy? At the time I first saw him his utter stupor might have led to the supposition of the former; yet his age, twenty-six, was unfavourable to that idea. He threw his head about, groaning a little, but his circulation was not in the least disturbed. Not feeling satisfied as to the nature of his malady, I determined to wait, in spite of the earnest wishes of all surrounding him to do something, or in fact anything, in order that a little time might be allowed for the disorder more fully to manifest itself. To have bled him at that moment, would have delighted all present, for the vulgar prejudice of bleeding, in every case of insensibility, no matter what the cause, is so great, that it is difficult to withstand the manifestation of public opinion which always takes place upon its non-adoption.

After a delay of about three-quarters of an hour, finding he remained in the same absolute stupor, I determined to abstract a very small quantity of blood, carefully feeling my way; but whilst waiting for the tape to effect that object, he raised himself, and laughed in that most violent convulsive manner peculiar to hysteria patients. It was enough: I again felt his hand, and



found a great heat over the parietal bones, which so satisfied me as to the true nature of his complaint, that I immediately countermanded the bleeding apparatus, and ordered him to be removed into the cold passages. Having procured buckets of cold water, we kept a continual flow of it over his head and chest; but notwithstanding the intense cold of the day, this seemed for a long period to have no effect upon him. He laughed and knocked himself about with so much violence that it required seven or eight men to hold him; and his head and chest, particularly the top of the head over the parietal suture, remained so hot, and the heat at these parts was generated so fast, that the cold water evaporated as if thrown upon anything warm.

Pursuing this treatment for an hour, his convulsive laughing altered to convulsive crying, which was the first symptom of a decided improvement taking place. His violence began to lessen, his incoherent talking was left off, and he began to place his hands upon the top of his head, as if in intense pain. The cold water to the head was still continued for half an hour longer, when he was quiet enough to have cold water offered him to drink. In a short time, about three hours from the time he was first taken, he was so far recovered as to know where he was, and to distinguish the persons about him. After having been made to walk about for a short time, he was rubbed dry, placed in bed, and soon fell into a sound sleep, being quite exhausted with his troublesome exertions. He awoke weak and tired; all that had occurred on the previous day was totally forgotten, and the time occupied by his fit was a blank in his existence. He had a little salts, hyoscyamus, &c. and I thought it prudent not to allow him to return to his business for two or three days.

The very term hysteria, derived from *ὑστέρησις*,—the uterus, marks the sex to which this disease usually belongs, and many eminent practitioners deny the possibility of its occurring in the male. In this case we have as strong an instance as possibly could occur in a woman. Although mankind is divided into two perfect sexes, every male is not equally masculine, nor every female equally feminine. Hence, in common conversation we talk of a masculine

woman, an effeminate man, meaning that the individual possesses the body of one sex, and more or less the mind of the other. The man who was the subject of this communication is small, weak, and effeminate, possessed of an excitable and susceptible mind, easily startled, and quickly terrified. In his sleep also he frequently talks, sings, laughs, rattles his chair by his side so as to make it unpleasant for any other person to be in the same room with him. I have been assured that he has been known to be a somnambulist; that one night he left his bed and took a walk; in his perambulations, however, he met with a sentinel on guard, who not knowing whether he was flesh and blood, or only some departed spirit risen from the church-yard, on which a part of the Bank is built, stamped his foot, and struck his musket violently, which caused him to return to bed without knowing any thing that had occurred.

A person in hysteria never meets with any compassion, all persons thinking it is in a great measure at the power of the patient to have or not to have a fit, as it best suits their purpose. These notions are not only in part correct, but are practically good, in all cases of slight hysteria; but for the more violent ones the doctrine is by no means safe. The patient is frequently left so feeble, after a fit of the violence that I have described as occurring in this man, that the slightest exertion or excitement, for many days, will cause a return, and the danger of a relapse is generally proportionate to the degree of weakness produced by the first paroxysm. Hence the extreme danger of bleeding in these cases; for although it may immediately bring the patient to his senses, it depresses an already too much depressed system, and the person will be ill for weeks or months, with the risk of relapsing into hysteria from the slightest excitement. In cases where bleeding has been practised, the only thing that the medical man can do is to enjoin absolute quiet; no noise must be allowed in the room; nothing must disturb this highly excitable nervous system. What, then, ought to be the treatment of a person in hysteria? The state of the patient sufficiently indicates; for if we make a careful examination, we find that the top of the head is burning hot. In

mild cases the patient feels the greatest oppression at that place, and the hair even sometimes falls off to a great extent in that situation. The feet, on the contrary, are generally icy cold, so that it appears that the body, from some cause, is unequally supplied with heat, whilst the pulse indicates nothing remarkable in the circulation. If, in hysteria, we apply heat to the cold parts of the body, and cold to the hot, we at once set right that which appears to be wrong. I never knew in any case this method fail, though in some, as in the one now detailed, it is very difficult to effect that object. The power of evolving heat was so great, that it required many buckets of water poured over the head and chest, before the head was in any degree cooled. Heat was not applied to the feet of this man, because his extreme violence rendered that troublesome.

In most slight cases, a few drops of æther poured on the top of the head will instantly suffice to relieve the sufferer, and by repeating this the moment the patient feels that a fit is likely to supervene, the habit will be broken, the system will forget to have a fit, and eventually the hysteria tendency will be cured.

To the physiologist, the peculiar state of the patient presents many curious points. Although the state of the mind, in relation to its power over the body, as well as to its consciousness of external objects, is most singular; in a subsequent fit, of which I shall presently make mention, this man appeared to have some knowledge of what he saw. The moon was shining bright, which he observed, and frequently made allusions to it, though on his recovery he was utterly ignorant of all that had occurred during the fit. In other cases the imagination seems greatly excited, and the person seems to perceive distinctly things that have no existence. Some time ago I attended a young lady in one of these hysterical fits, who was making a drawing with a pencil upon the sheets, of the head "of a funny little man she saw in the moon," though on her recovery she would never even believe that she could be so "ridiculous," nor could she credit her other extraordinary fancies.

But let us return to our male patient; for we may naturally expect, after a fit so violent, others would follow, and I

used to ask him, nearly every time I came in contact with him, whether he had been again troubled, but still he remained perfectly well till the evening of the 27th of December last, when I was again summoned to attend him, as he was in the same state exactly he was in the previous year. On repairing to the spot I found him extremely violent, requiring eight or ten men to prevent him from dashing his head against anything that might happen to be in his vicinity. He was immediately removed into the external air, and the cold water treatment pursued in precisely the same manner as before. He required many buckets of water to cool him, whilst the bystanders were already too cold. The steam came from his head in the same way; in fact there was nothing worthy of remark in this fit more than in the one that had preceded, except that he had been partaking of the gaieties of the season, and although usually a very temperate man, he had taken a small quantity of porter and spirits more than usual. The immediate exciting cause of this fit seems to have been derived from his companions having joked him about some trifling matter; otherwise no further reason could be given. In about two hours and a half he was sufficiently recovered to drink cold water, which rallied him to such an extent that in a short time more he was enabled to be placed in bed: an emetic was then administered to him, to clear his stomach, and after its operation he speedily fell asleep.

The next morning he awoke weak and tired, but was enabled to walk two miles to his own home. He again went to bed, and slept for some time, after which he had a little magn. sulphatis, with hyoscyamus, and was sufficiently well to return to his work on the third day, although still weakly.

Having determined to send the account of this man's fit to the *MEDICAL GAZETTE* last year, I was desirous to see whether he would have any repetition of his malady. Having found a return after a year and two days, I have sent the account of the two fits, both of which, although occurring in the male, were more violent than we generally witness in women.

*Note.*—Up to the 27th Feb. he has had no return of his complaint.

7, Finsbury Circus, Feb. 27, 1842.

## ARTIFICIAL ANUS.

*To the Editor of the Medical Gazette.*

SIR,

CONCEIVING that the following subject may prove interesting to the readers of the *MEDICAL GAZETTE*, I beg to offer it, at your disposal, for insertion in the pages of your widely circulated journal; together with a brief outline of the results of all the cases in which the operation of artificial anus "*par le procédé de Callisen modifié*" has been performed by Dr. Amussat.

I remain, sir,

Your obedient servant,

JOHN CHARLES PARROTT.

Paris, Feb. 21st, 1842.

In your valuable periodical for April, 1841, I find a very lengthened and explicit statement, by Mr. Erichsen, of the two first cases in which the operation, proposed by Callisen, for relief of retention of the *fæces*, and modified by Dr. Amussat, was performed. Since Dr. Amussat's communication, read at the "*Académie de Médecine*" in October, 1838, concerning the operations of artificial anus, which he had already successfully performed in the left lumbar region, without opening the peritoneum, he has had several others of the same kind, with this difference, that in three of the cases the operation was in the right lumbar region, but at the same time without injury to the peritoneum. The results of four cases, together with an account of one operation performed according to the method of Littre, have been published by Dr. Amussat, in his "*Mémoires sur la possibilité d'établir un anus artificiel dans les régions lombaires, sans pénétrer dans le péritoine.*" In the month of November last, Dr. Amussat had occasion to perform, for the fifth time, the operation of artificial anus by the same method. With the exception, however, of the case I intend presently to detail, all the subjects of the above operations were persons far advanced in life, the diseases under which they laboured, and for which the operation was imperatively called for, having been, in three of the instances, scirrhus affections of the superior part of the rectum, and in the remaining cases the autopsy alone sufficed to discover the nature as well as the seat of obstruction.

It would be superfluous on my part, after the very recent observations which have fallen from Mr. Erichsen, to enter now into any description either of the surgical anatomy of the parts concerned, or of the *modus operandi*. Those, however, who may feel interested in this subject I must refer to the *Mémoires* published by Dr. Amussat, which are throughout eminently characterised by close and unremitted investigation. In these elaborate dissertations, he has fully and candidly stated every fact which may tend to weigh for or against the operation.\* It would also be, at the same time, quite impossible to insert, in this limited space, any considerable portion of the facts connected with this operation, or of the circumstances which may lead to the necessity of its performance; still I trust that the simple brief statement of the following cases, without any comments upon them, will clearly point out its paramount utility in similar predicaments.

CASE I.—Madame D. *æt* 48.—Complete obstruction of the sigmoid flexure of the colon, from the existence of a large pelvic tumor, the nature of which could not be determined. Obstinate constipation had existed for twenty-six days. *Stercoral tympanitis*. Artificial anus established June 2nd, 1839, by opening the left lumbar colon, without injury to the peritoneal sac.

*Result.*—This patient lived for a period of five months, when she was attacked by peritonitis, produced by the progress of the cancerous affection (for the tumor was only ascertained, on making a post-mortem examination, to be of a malignant character), which had caused the complete obliteration of the lower part of the intestinal canal. All the signs of a recent attack of acute peritonitis were found. The anus, which had been established in the left lumbar region, was most distinctly formed.

CASE II.—Monsieur T., *æt* 62.—The disease consisted in scirrhus vegetations of the internal surface of the upper part of the rectum, which had produced a complete obstruction to the exit of the *fæces*. The same operation was performed, as in the first case, on

\* The first *Mémoire* was published in 1839, the second in 1841, and may be procured at the library of H. Baillière & Co. Regent-street.



the 14th of July, 1839. The patient had no stool for eight days.

*Result.*—The patient (who has been living at Rouen since the month of August, 1839) is now perfectly convalescent. The last account which Dr. Amussat received of him was of a most satisfactory description. The artificial anus is well formed, and gives passage to the fæces very regularly. The carcinomatous affection of the rectum does not appear to have made any perceptible progress. Occasionally, by aid of injections practised from above (that is, from the artificial to the natural anus), the liquid escapes by the rectum, possessing a decidedly foetid odour. He is enabled to take daily exercise. Appetite is very good. The process of digestion is not at all interfered with, and he is gaining strength rapidly.

**CASE III.**—Madame Bollman, æt. 47.—Retention of fæces for thirty days. No appreciable cause could be ascertained. Vomiting of fæculent matter had existed for several days. An operation was performed on the 8th of May, 1840, according to the method of Littre, by opening the cæcum in the iliac fossa.

*Result.*—The patient died in twenty-four hours. Acute peritonitis had taken place. The seat of stricture was found to exist at the junction of the transverse with the descending portion of the colon, in which a portion of the vertebra of a bird had become impacted. Twelve hours after the operation, the edges of the wound had already assumed a livid aspect, and Dr. Amussat was fearful of the approach of gangrene, which has been known to happen in persons who were subjected to similar operations. The uncertainty as to the seat of obstruction, and the absence of positive signs to show that the colon was distended from this side, induced Dr. Amussat to proceed according to the method of Littre.

**CASE IV.**—Madame B., æt. 50.—Complete occlusion of the intestinal canal. Insuperable constipation had existed for forty days. Impossibility to discover either the nature, seat, or cause, of the retention of fæcal matter. Operation performed in the right lumbar region upon the ascending colon, without opening the peritoneum, July 3rd, 1841.

*Result.*—Since the operation, now more than eight months, the patient

has continued in the most satisfactory state. The artificial anus has been for some time firmly established. The evacuations are not involuntary, as one might be inclined to suppose, but, on the contrary, injections are required to facilitate the escape of the fæces. The latent affection, which has necessitated the establishment of an artificial anus, does not appear of a nature to compromise, at least for a long time, the success of the operation. This patient I was kindly permitted to visit a few days ago. I can fully corroborate the above statement.

**CASE V.**—Madame Legrand, æt. 60. Cancerous affection of the superior portion of the rectum. Complete obstruction to the passage of the fæces had existed for forty-five days. Artificial anus established in the right lumbar region, without opening the peritoneum, upon the ascending colon, August 21st, 1841.

*Result.*—The patient died ten days after the operation. The cause of death was found to depend on the ulcerative process, which had taken place in the diseased portion of the bowel. The mucous membrane of the small intestines exhibited, in several points, patches of inflammation. The patient had, two days prior to her decease, passed fæces through the natural anus; and, at the time of the autopsy, the finger could be readily introduced through the strictured portion of the gut, which, prior to the operation, was totally impracticable. No traces of peritonitis were found to exist.

**CASE VI.**—Monsieur Cogniart, æt. 57.—Retention of the fæces for thirty-three days. Cause of obstruction attributed to the existence of a large tumor in the left iliac fossa, supposed to be of a malignant character. Stercoral vomiting had commenced on the morning of the operation, which was performed in the right lumbar region, in November, 1841.

*Result.*—This patient I had the opportunity of seeing, in company with Dr. Amussat, a few weeks after the operation. Nothing could exceed the satisfactory manner in which the patient had throughout progressed. The artificial anus, by aid of tepid injections every other day, gave passage to the fæces very regularly. The patient is enabled to sit up during the greater portion of the day, and his ap-

petite was excellent. He left Paris, to reside in the country, shortly after. Dr. Amussat has since then received a letter from the medical man in attendance, in which he speaks of the rapid progress the patient is daily making. The cicatrization of the wound is entirely effected.

**CASE VII.**—The last case, of which I purpose to enter more fully into detail, is of a most deeply interesting nature:—

A woman, æt. 30, of tolerably robust and healthy constitution, who has been married some years, and already been the mother of two children (both of whom are dead), was delivered of her third child on the afternoon of Thursday, January 20th, 1842. She was attended in all her labours by a midwife. Nothing abnormal, however, occurred during the birth of any of the children. At the lapse of some hours after the delivery of her third child (an apparently stout and healthy-looking boy) it was observed by the midwife that there existed some impediment to the exit of the fæces, twelve hours having now elapsed, and no meconium been voided. A surgeon was immediately sent for, who, on examination, found that the obstruction was owing to the presence of a cul de sac about an inch and a half from the anus: the latter appeared well defined. A small silver female catheter was introduced, which, however, directly met with considerable resistance. The child was then taken to the "Hôpital de Clinique," when M. Larrey, having tried without success the introduction of the catheter, plunged a trocar (as was believed) into the cul de sac. Slight bleeding ensued on the withdrawal of the instrument, but no meconium escaped. The child was at length brought to Dr. Amussat on Saturday, January 22nd. He was then just forty-eight hours old. The countenance presented a dark, suffused appearance. The abdomen was hard and much distended. There had been frequent vomiting since birth. Pulse very frequent and feeble. Respiration performed with great difficulty. Urine had been freely voided, but was exceedingly turbid. No meconium had yet passed. A small bougie was now introduced, carefully avoiding any force, to the extent of about an inch and a half, when its progress was arrested by some resisting substance. On the in-

strument being inclined more posteriorly an opening was discovered, in which the bougie easily passed to the extent of four or five inches. This was very evidently a false passage. Dr. Amussat now examined with his little finger, with which he enlarged the opening previously made by the instrument. The obstruction was soon recognised. It was soft, somewhat elastic, and smooth on its surface, but did not give the impression of an intestine distended with meconium. The introduction of the index followed that of the little finger, but nothing indicated the presence of the large intestine. Dr. Amussat was of opinion that about two inches from the anus there existed an interruption of the rectum, the calibre of the gut being at this point totally obliterated, but that the inferior portion of the bowel, together with the sphincter, presented nothing abnormal. It appeared, however, to Dr. Amussat and to all that were present, after a very careful examination, totally impracticable that an artificial anus could be established either in the anal or coccygeal regions, and he therefore determined at once to open the colon in the left lumbar region.

The child being placed on his right side, a transverse incision, about two inches in length, was made midway between the crest of the ilium and the last false rib, commencing at the external border of the sacro-lumbalis and longissimis dorsi: the subjacent textures having been divided, the cellular and adipose tissue covering the kidney and colon was exposed. This was now, after a long and careful dissection, divided, after a great deal of uncertainty. The lower extremity of the kidney was fully exposed to view, but the intestine could not yet be recognised. The incision was, therefore, enlarged backwards and downwards (with an artificial light, the shutters having been closed), and Dr. Amussat saw (for his feeling did not afford him any certain indication) something of a violet colour, which he judged to be the small intestine, placed outside, and before the kidney. That was pushed backwards, and the colon at length detected. Two tenacula were now introduced longitudinally, one from above downwards, the other in a contrary direction, in order to prevent any retraction of the bowel, and a longitudinal incision after-

wards made. A considerable quantity of gas and meconium escaped. The edges of the opening in the intestine were fixed to the integuments by means of three sutures, and tepid injections administered. The hæmorrhage which occurred during the operation was easily suppressed by means of torsion. The artificial anus was now covered by a hot cataplasm, and the child removed home.

Monday, January 24th.—Since the operation no untoward symptom has occurred. There is little or no febrile excitement. The artificial anus appears well formed. The cataplasms, when removed, are always covered with fæculent matter. The integuments adjacent the wound are somewhat œdematous and reddened. Nothing has passed per rectum.

28th.—Continues much the same. The wound presents already a healthy granular appearance. The child takes the breast very well, and is perfectly tranquil. The fæces continue to pass well through the artificial anus. Abdomen quite free from distension.

February 1st.—The artificial anus appears firmly fixed to the wound, which presents a healthy aspect. The evacuations, which are of a liquid consistency, take place abundantly. The abdomen is soft, and insensible to pressure. Sutures came away yesterday. The child is quite free from any febrile symptoms, and takes its nourishment with avidity.

4th.—Continuing to progress very favourably. In the left iliac fossa there is a remarkable projection observed whenever the child cries, or when the fæces are being expelled. It appears to be a distended intestine.

7th.—Upon Dr. Amussat's visiting the child to-day, he found that there had been no evacuation for forty-eight hours. The abdomen was much tumefied, and painful on pressure. Urine had been voided freely. Bougies were introduced into the artificial anus, and injections afterwards made. A large collection of fæculent matter escaped, and the child became immediately more composed. A small wax tent to be kept constantly in the anus, attached by threads.

9th.—Much improved. The fæces, which are now of a more solid consistency, escape readily through the artificial anus. Tepid injections admi-

nistered every twenty-four hours. The child appears more animated, and every thing predicts a speedy convalescence. The projection in the iliac fossa still exists, but does not occasion any apparent inconvenience.

It would be tedious to dwell upon the minute reports of this highly interesting case. Since the time of the operation four weeks have now elapsed, and nothing can exceed the satisfactory condition of the young patient. The wound is perfectly cicatrized. Defecation is performed with the greatest facility. A small tent is kept constantly in the artificial anus, which prevents any closure of the opening. The child is evidently as well developed as any other of the same age.

From this last case we may reasonably infer that the operation proposed by Callisen, and modified by Amussat, is applicable in children as well as we find it is in adults, and that, alike in all, the opening in the intestine is effected without injury to the serous membrane of the abdomen.\* I know that many surgeons are still incredulous upon this subject, their objections against the performance of this operation being founded upon the impossibility of avoiding the peritonæum. But have we not conclusive proofs that it can be safely practised externally to the peritonæal sac, and do not the above striking examples of success afford us additional evidence in favour of the practice? Again, in one of the above detailed cases, where death took place, the autopsy has fully verified the correctness of Dr. Amussat's views.

In order to arrive at some definite conclusions, as to the merits or advantages of the respective modes of operations of Littre, and Callisen, modified, it may be useful to subjoin here some statistical account of the cases in which the plan of forming an artificial anus has been adopted. The most correct, and, perhaps, the only authentic account published, is contained in the first *Mémoire* of Dr. Amussat, a copy of which I have drawn up. (See following page.)

We have, I think, alas! too many examples to require further proof of the danger which attends it. Although at present the instances in which Dr.

\* Dr. Amussat told me that of six new-born children which he examined after death, in only one of these existed a meso-colon.

Date.	Operator.	Sex.	Age.	Nature of Complaint.	Nature of Operation.	Results.	Observations.
1776	Pillore	Man	—	Stricture of rectum	Incision in right iliac region to reach the cœcum	Died 28 days after.	
1783	Dubois	—	3 days	Imperforation of anus	Method of Littre	Died 10 days after.	
1793	Duret	Male	2 days	Do.	Do.	Died a short time ago, æt. 48	Communicat. of rect with bladder
1794	Desault	Male	2 days	Do.	Do.	Dead 4 days after	Transverse colon was opened.
1797	Fine	Woman	63 years	Scirrhus of super. portion of rectum	Umbilical region	Lived 3½ months	
1798	Voisin	Child	—	Imperforate anus	Littre		
1800	Desgranges	Girl	4 years	Rectum terminated in vagina	—	Living 3rd June 1801.	
1802	Voisin	Boy	10 days	Imperforate anus	Littre	Died 4 days after	Artificial anus made in ilium.
1809	Duret	Boy	2 days	Do.	Do.	Dead 4 or 5 days after	Rect. imperf. 1 inch from anus
1813	Legrès	Child	—	Do.	Do.	Died 17 days after	Rectum opened in urethra.
1813	Surg. at Lyon	Child	—	Do.	Do.		
1813	Surg. at Brest	Child	—	Do.	Do.		
1813	Serrard	Girl	60 hours	Imperforate rectum	Do.	Living at age of 22 months.	
1816	Freer	Child	—	Imperforate anus	Do.	Died 3 weeks after.	
1816	Mirièl	Girl	2 days	Imperforate rectum	Do.	Living 3rd June 1835.	
1818	Dupuytren	Child	—	Imperforate anus	Incision in cœcum without opening the peritonæum	Dead 2 hours after.	
1818	Freer	Man	47 years	Stricture of rectum	Littre	Dead 8 days after.	
1820	Onorard	Child	—	Imperforate rectum	Do.		
1820	Pring	Woman	64 years	Stricture of rectum	Do.	Living 5 or 6 months after.	
1822	Mirièl	Boy	84 hours	Imperforate rectum	Do.	Living May 1835.	Rectum terminated in a cul
1823	Mirièl	Boy	6 days	Imperforate anus	Do.	Survived 27 months	de sac about 2 inches
1824	Murtland	Man	44 years	Stricture of rectum	Do.	Living a year after.	from the anus.
1830	Bizet	Boy	—	Imperforate anus	Do.	Died one month after	Rectum absent.
1830	Bizet	Child	100 hours	Do.	Do.	Died next day.	
1835	Klewig	Boy	3½ days	Do.	Do.	Died in 1838.	
June 1839	Amussat	Woman	48 years	Obstruction of rectum (cancerous)	Cullisen modifié.	Died 5 months after	Peritonitis produced by pro-
July 1839	Amussat	Man	62 years	Scirrhus of rectum	Do.	Living 20th Feb. 1842.	gress of cancerous affec-
1839	Velpeau	Woman	aged	Imperforate rectum	Littre	Died 2 days after	tion.
1839	Roux	Child	—	Imperforate anus	Do.	Dead 2 hours after.	Peritonitis.
1840	Roux	Child	4 days	Imperforate rectum	Littre	Living 4 days after.	
May 1840	Amussat	Woman	47 years	Obstruction of intestinal canal	Do.	Dead 24 hours after	Peritonitis.
July 1841	Amussat	Woman	50 years	Retention of feces for 40 days	Cullisen modifié.	Living.	
Aug. 1840	Amussat	Woman	60 years	Scirrhus of rectum	Do.	Dead 10 days after	Enteritis.
Nov. 1841	Amussat	Man	57 years	Retention of feces for 33 days	Do.	Living.	
Jan. 1842	Amussat	Child	48 hours	Interception of rectum	Do.	Living.	

Amussat's method has been adopted are not very numerous, yet in comparing the results of the two modes of treatment, the great superiority of the latter is, I think, placed beyond a doubt. By the one process, the peritoneum receives no injury; by the other it is opened twice; a fact which seems to call for the rejection of Calisen's method altogether.

## EVACUATION OF FLUID FROM THE THORAX

BY MEANS OF THE COMMON GROOVED NEEDLE.

*To the Editor of the Medical Gazette.*

SIR,

I was led by accident, some time since, to the method of drawing off fluid in cases of effusion into the thorax, which I have lately found useful in cases of abdominal dropsy. The plan is so simple that I dare say it may be followed already by many persons, but as to others it may not have occurred, I think it right to offer the suggestion through the medium of the *MEDICAL GAZETTE*.

During the use of the common grooved needle for exploring the chest, on ascertaining positively the presence of fluid, previous to paracentesis, it happened on one occasion, at the Bristol Infirmary, that so large a quantity of fluid passed readily through the instrument as to preclude the necessity of any further operation. As paracentesis of the thorax, by means of a trocar, is much more painful than the introduction of the needle, and is sometimes followed by troublesome results, I determined to try for the future whether the same success would follow the use of the latter instrument. In many instances this was found to be the case, but occasionally the fluid was too thick to run off through so small a passage. This was obviated by getting a needle made with a somewhat larger groove. Such a needle has been used with perfect success in every case of the kind that has fallen under my observation during the last year or two, and the number has been considerable. The pain is so slight, that a patient, who has once experienced it, totally disregards it, in the desire of that relief which he has obtained, and has called eagerly for

a repetition, to which he has submitted as to a trifling annoyance.

I have now a patient in the infirmary, a female aged fifty, lately affected with ascites. She had been twice tapped by means of the trocar. When she was full a third time, I proposed a third paracentesis. She earnestly deprecated it on account of the pain which she had suffered from the trocar on a former occasion. It occurred to me to try the grooved needle, and it was accordingly passed through the linea alba, and the patient was relieved. It is worthy of note that the effusion of fluid has not returned. The woman, although previously in a state of very broken health, appears now, after the interval of some weeks, to be convalescent. I think it just possible that paracentesis by the needle may be less favourable to a return of effusion in cases of ascites, as it is known to be in those of hydrocele. Whether this may be the fact or not, I am sure that great advantage will arise to patients if the use of the needle be substituted for that of the trocar in tapping both for ascites and for hydrothorax. I am persuaded that the practice of deferring paracentesis in the former disease till all other means, many of which are very exhausting ones, have been long tried, and have entirely failed, is one principal cause of the frequent return of effusion. The use of the needle affords so much greater facility that the operation will cease to be dreaded, and will be performed more easily, and, if so, with more frequent ultimate success.—I remain, sir,

Your faithful servant,

J. C. PRICHARD, M.D.

Physician to the Bristol Infirmary.

Bristol, March 3, 1842.

## MEDICAL GAZETTE.

*Friday, March 25, 1842.*

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## POOR-LAW FREAKS.

It is to be hoped that the exertions of the press have been attended with a certain degree of success, and that we



are about to witness some mitigation of the late enactments against the poor. Malthusians of the better sort—that is to say, those who are but lukewarm disciples of the great economists—will admit some improvements in the dietaries, and other approximations to humanity, which do not threaten totally to subvert their darling scheme, of teaching the poor “to rely on their own resources;” while those sterner theorists, who are alike inaccessible to pity and to reason, will still see the necessity of yielding something, though they may probably qualify their sacrifices with the ungracious name of concessions to public clamour. In order, however, that the slight vantage-ground gained by humanity may be maintained, it is necessary that the proceedings of the Commissioners and their subalterns should be observed with undying watchfulness—from the conclave of Somerset House down to the nurses of a Union bastille. Without this unceasing superintendence there is the most imminent danger that the harshest misdeeds of the new system may be revived with double severity.

Meantime, it may be useful to dwell upon the abuses introduced by the working of the new law into the medical relief of the poor; abuses so enormous and so shocking, that had they continued unchecked, myriads would have been practically left without aid in their sickness. Those who wish to know what is the condition of the indigent classes when left to their own resources, may consult the admirable essays of Dr. Alison on the state of the poor in Scotland, and the communication of Mr. Bell in our last number but one; and may thence learn the acmé of perfection to which the preaching and practice of our economists alike tended.

Many of the examples of the unrestrained working of the system in its most flourishing state are to be found

in a pamphlet published by the Provincial Medical Association, which is now before us\*.

The Lincoln Union was formed in 1836-7, out of 89 parishes, with a population of 30,230. The poor had been previously attended by fifteen or sixteen practitioners, whose united salaries amounted to £350 per annum. When we consider that, even according to the estimate of Assistant-Commissioner Gulson, the extent of this Union is 20 miles by 16 or 17—an estimate which is below the ascertained measurement—it will be allowed by every impartial person that this sum is far less than justice and humanity require: no one of average common sense would expect the poor of so large a district to be properly attended at such a rate. With the Guardians, however, *quocunque modo rem*, “save at any cost,” was the one ruling maxim; and they “fixed the medical salaries at £270 for the whole Union, which sum was declined by every practitioner to whom it was offered.”

As the medical practitioners and the Board of Guardians could not come to terms, the latter obtained the services of a Mr. Shireff, who took the whole of the Union for £200, for one year.

Whether a practitioner with so large a district under his care would improve much in the practice of physic and surgery, we know not; but it is clear that he would have ample opportunities of learning horsemanship and topography, did his salary but allow him to keep a sufficiently large stud.

This curious experiment in racing and doctoring, or running a practitioner against time, does not seem to have

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\* The administration of medical relief to the poor under the Poor-Law Amendment Act, and other legislative provisions for the public health, considered in the reports of the Poor-Law Committee of the Provincial Medical and Surgical Association. To which are appended certain clauses suggested for insertion in the contemplated bill for the amendment of the Poor-Laws. London, 1842.

been relished either by the poor or the rich in the Lincoln Union. The former were so cautious, that, with the exception of the sick in the workhouses, Mr. Shireff was for six or seven weeks without a pauper patient on his list; and he confessed that, for the first year, their number never exceeded fourteen. The rich, too, patronized him but feebly; so that, in spite of the support of the Guardians, who narrowed his district, and allowed him to dismiss his assistant without diminishing his salary, he was obliged to leave the Union in the November of the following year.

Since this event various changes have taken place, and at present nine medical officers are employed, whose united salaries amount to £260 per annum. Mr. Gulson says, pleasantly enough: "I think that, in this instance, no Board of Guardians could be shewn to be more anxious to do the best that could be done for the poor."

If humour has been justly defined to be that kind of wit which makes others laugh, without laughing itself, the Assistant-Commissioner must be allowed to be a proficient in it. Next comes the Bridgewater Union *infelicitis memoris*. Who can forget the bad eminence attained by this Union among all the mismanaged districts in England—the shabby offers of the Board—their refusal to fulfil the engagements they had made with their medical officers—and their appointment of a candidate who was not a surgeon? Above all, who can forget the Bridgewater Union Workhouse, where the poor were mowed down by disease and starvation, not singly, but in the gross?

And over them triumphant Death his dart  
Shook, but delayed to strike, though oft invoked  
With vows, as their chief good, and final hope.

The Aylesbury Union, containing forty parishes, and a population of 21,420, was originally divided into four districts, and supplied with only three medical officers; so that, in the remoter

parishes, poor persons suffering from acute and serious disease were literally unable to procure medical aid. A surgeon might have eight, or even twelve miles, to go to a case; nay, the officer who held two districts "might have been called upon, after accomplishing fourteen miles of this district [No. 2,] to travel nineteen miles through No. 4."

Curiously enough, if any thing could be curious to one who has studied the workings of the New Poor-Law, Assistant-Commissioner Wade "was known to suggest that one medical man could undertake the whole duty; the extent of the Union being twenty-three miles by fifteen."

When the mean offers of Boards of Guardians are refused, they have commonly threatened to bring down medical men from London; but it is to be hoped, for the sake of the respectability of the profession, that these intruders have rarely succeeded in establishing themselves in these mismanaged Unions. It is painful, however, to find any practitioner reduced to want, even by compliance with the whims of our starvationist sages, as in a case narrated in the pamphlet of the Provincial Association. In December, 1838, a woman, whose manner bore witness to her education, and who was the wife of a surgeon, applied for relief at the meeting of Guardians in St. George's Union, Southwark. Her husband "had been one of the medical attendants to a country Union, comprising twenty-five parishes; and for his services the Poor-Law Commissioners had awarded a salary of £30 a year (?) on which, it appears, he and his wife starved."

In the Eton Union two strangers were brought down by the advertisements of the Guardians. One of them was dismissed by the Board, after a coroner's inquest on a pauper whom he attended. During the unavoidable absence of the other stranger, the sick poor applied for relief to a druggist, who



allowed a dislocated shoulder to remain unreduced for two nights and a day, till it was charitably reduced by one of the established practitioners.

The Faversham Union was formed of twenty-five parishes, which had been attended by eight practitioners, whose united salaries amounted to about £500. Sir Francis Head advised the Guardians to offer £250. They did so; but their proposal being declined by all the resident practitioners, the Guardians, nowise disheartened, advertised, and with the most splendid success.

"A perfect stranger, being at the time in prison for debt, applied for and obtained the appointment to the whole Union! He was without a horse or an assistant, and destitute of the necessary remedies and means of preparing them."

The Guardians, however, were wide awake to the advantage offered them by the indigent state of their medical officer: leave them alone for striking a bargain.

"In consequence of his inferior equipments, the Board reduced his salary to £225, thus incapacitating him still further for attending properly to his unfortunate patients."

Could Harpagon have done better?

"The complaints of the poor were loud and constant. Nevertheless the Guardians retained their medical officer until 1837, when, from increasing embarrassments, and inability to fulfil his engagements, he abruptly absconded."

Really, it is impossible to refrain from something like praise of the awkward and misplaced zeal of these unjust stewards. Could any one succeed in inspiring them with a spark of right feeling, their obstinacy in a bad cause might become ardour in a good one; and the dogged instinct with which they persevered in saving a few wretched pounds, might be turned into an unceasing struggle to lessen the amount of human misery. As it was, however, they stuck to their

friend as long as his shadow was to be seen in the Faversham Union.

"I know not, I care not, if guilt's in that heart,  
But I know that I love thee, whatever thou art!"

In the Hambledon Union, containing sixteen parishes, and 11,882 inhabitants, seven practitioners had been employed. The salaries and extra charges amounted to about £450 per annum.

This would not have been a very enormous remuneration for attending the poor in a district twenty miles by ten, with an area of about 106 square miles.

But *novus rerum jam nascitur ordo*; the Guardians offered £250 per annum, including midwifery; while the medical practitioners thought that midwifery should be charged extra, and no agreement could be made.

The Guardians accordingly took refuge in the columns of the newspapers, and obtained a tender frugal enough to make a Board's heart leap with joy; just imagine, a tender of £110 for the whole Union! The Guardians immediately gave the person £40 more than he asked; the next year they added £100 to his salary, and afterwards extra remuneration for midwifery, so that he finally had, and has, the very terms proposed by the former surgeons.

It would be satisfactory to know how many assistants, biped and quadruped, a man must possess, to enable him to do justice to the patients at every extremity of the Hambledon Union. But we must defer this inquiry to some future occasion.

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## POOR-LAW.

### MEDICAL OFFICERS OF UNIONS.

*To the Editor of the Medical Gazette.*

SIR,

I BEG leave to hand the enclosed papers and accompanying letter from the President of the Royal College of Surgeons, upon the appointments, &c. of medical officers of Unions, under the Poor-Law

Amendment Act, for insertion, if you think fit, in the *MEDICAL GAZETTE*. I am, sir,  
Your obedient servant,  
THOMAS HOVELL.

Clapton, March, 21, 1842.

LETTER FROM MR. GUTHRIE.

MY DEAR SIR,—I transmit to you herewith a copy of the Medical Order of the Poor-Law Commissioners, with their explanatory letter accompanying it. You will perceive that the mode of obtaining the services of medical men by tender is abolished; and that they will, on the expiration of the present contracts, hold their places in future, subject only to death, resignation, or legal disqualification; and whenever, from circumstances, it may be necessary to ask publicly for the services of any physician, surgeon, or apothecary, the sum to be paid for such services is required to be stated; and as it must have been previously approved by the Poor-Law Commissioners, a return to the system of tender will be prevented; but which, without this check, would have been in all probability attempted.

You, and the Profession at large, will readily acquit me of having had anything to do with the qualification part of the order, amended as it is by the explanatory letter. It was my wish that the double qualification of Physician of any University or legally constituted College in the United Kingdom, and of Surgeon of any one of the three Royal Colleges of Surgeons, or of one of these surgeons being also a Member of the Society of Apothecaries, or in practice before 1815, should have been the qualification required by their order; the medical examination by the heads of departments of the public service being considered equal to that of the Examiners of the Society of Apothecaries, without reference to 1826, as stated in Article 4 of the Qualification Order. There appeared to be some objections to these propositions which the legal adviser of the Poor-Law Commissioners could not surmount; but Mr. G. C. Lewis, the only Commissioner then in London, was so sensible of their propriety that he offered to propose to the Secretary of State to see me with him on this particular point. In the meantime, the Secretary of State was pleased to transmit to me, in my official capacity, the heads of a bill for the improvement of the medical profession, which he intended to introduce into Parliament this session; and as this bill, if carried into effect, will settle the matter in a manner which will be highly satisfactory, it was not worth while pressing any further alteration at this moment on the attention of the Poor-Law Commissioners.

With respect to the rates of *extra* payment for surgical and midwifery cases, the

medical profession and the poor are greatly indebted to the kindness, the humanity, and the liberality of Mr. Lewis. The only point with which I have had nothing to do, is that which relates to the Consultation Certificate, and which will, of course, follow the fate of the other qualification clauses.

I understand the sum of twenty shillings to be justly claimed by the surgeon when the distance from his own house, in an ordinary case, exceeds two miles. The sum of forty shillings for difficult and protracted cases cannot, I think, be misunderstood.

The maximum area and population of medical districts are in progress of diminution; nevertheless a district of 15,000 acres, or a rural population of 15,000 persons, the quantities assigned by the order, are both one half too large for one medical officer; it being impossible that the sick poor can be justly and fairly attended to by him, although there may be many reasons why Unions or districts of this extent and population should exist. In all such cases, the medical officers should be multiplied; no one should be allowed to go more than three miles from his own door, if it can be avoided; and if there should happen to be eight, ten, or more parishes in any of these Unions, and a qualified practitioner can be found in every parish, he should be employed, and held responsible for his own conduct, but not for that of any of his coadjutors.

It is not, however, in my opinion, advisable for the members of the medical profession to interfere, or to give themselves any trouble on this subject, as it is one the Boards of Guardians will themselves correct, as soon as the remaining and the only grievance, as I venture to think, which really and seriously interests the medical men, is removed. That grievance is the absence of a principle, or the want of recognition by the Poor-Law Commissioners of a principle, by which the remuneration of medical practitioners for their ordinary services shall be regulated.

There is no part of this subject that I have not thoroughly investigated from the best possible sources of information; and when I stated to you in my last letter that the total sum paid to the doctors was not half what it ought to be, I stated less than the truth, for in many parts of England it is not one third, although in others nearer London it sometimes approaches the sum which ought to be paid according to those computations which the Poor-Law Commissioners do not disavow, and which are so often alluded to in the reports of their own assistant-commissioners, and particularly in those of my very able friend, Colonel Wade.

A person not conversant with this subject will naturally express surprise that any man, or set of men, should wish to work out de-

tails without a guiding principle; because such person, or indeed any one acquainted with the ordinary forms of business, must be aware that it cannot be done in a satisfactory manner; for where many parties are concerned, disagreements must necessarily take place, which would not occur if a principle of remuneration were fairly established.

It is supposed that the Poor-Law Commissioners have the power of establishing this principle if they pleased so to do. It is, however, a point which I could not, consistently with that courtesy which is due to all public functionaries, press on Mr. G. Lewis; and I really cannot say whether they have the power or not; but if they have not, they ought to have it, and to exercise it; for nothing can be more unreasonable than for one Board of Guardians to be permitted to estimate the services of a surgeon at thirty pounds; whilst another Board, more liberal, values similar services at sixty; and a third Board considers the same services worth, and actually gives, a hundred.

These gentlemen form their estimate on no rule nor principle beyond their own good pleasure; and the situation of the apothecary, whose poverty, but not his will, forces him often to take a sum for his services which will not enable him to perform them. They are, therefore, not performed; and the poor have only the semblance of medical assistance, but not the reality, in many parts of the kingdom; and they never will have it until a principle of remuneration for medical services shall be laid down, and enforced by the Poor-Law Commissioners.

The mischief has been done by the boards of guardians, who have beaten down the doctors to such extent by the tender system, and the introduction of new persons, frequently incompetent as medical men, where the old ones have resisted. That the Poor-Law Commissioners do not like it, appears to me to make them act on any principle which shall have the effect of materially increasing the salaries of the medical officers; although by so doing they will secure to the poor the effective attendance of capable and humane practitioners.

I am aware that gentlemen of great ability have been often engaged by the boards of guardians as union doctors; but then they do not secure their effective services; they only obtain in the greater number of instances those of their apprentices or students, who are often utterly incompetent to fill their places; and some of these young gentlemen have made a merit with me, in my official capacity as president of the college, that they had for two or three years attended the poor without knowing any thing of anatomy, physic, or surgery, than they could pick up behind the counter of an apothecary's or druggist's shop. I did intimate to the Poor-

Law Commissioners that no assistant should be allowed to act for his principal unless he possessed at least one qualification, either from the College of Surgeons or from the Society of Apothecaries; but I did not feel I should be justified in urging this point on their attention, unless their order was to be accompanied by another, which should so augment the salaries of the union surgeons as to enable them to meet this additional expense.

Two principles of remuneration have been proposed, and acknowledged by the Poor-Law Commissioners. One is to allow the doctor from three pence to six pence a-year for each person, sick or well, in every rural district; and from three halfpence to two pence in every town district. Three pence per head when the rural district is small, four pence halfpenny when larger, and six pence when it is extensive, and the population is dispersed.

It is a fair and honest proposition, and beyond all comparison the best, because it conceals nothing, and admits of the most prompt and perfect assistance being given to the poor. There are some few slight difficulties attending its execution, but they cannot be maintained as valid objections before any competent investigation. The real objection is one with which the doctor has no concern. It is purely theoretical, and has been disproved by the experience of the last seven years. Wherever there is a workhouse it should be paid for separately at the rate of ten pounds a-year for every fifty persons, and of fourteen per cent. for medicines; so that the salary of a medical officer, for attending daily a workhouse containing fifty persons, and finding them in medicines, &c., of all kinds, would be seventeen pounds a-year.

The second principle of a pauper list and a per case system, is that which has been selected by the Poor-Law Commissioners for recommendation to the Boards of Guardians, under head, "Mode of obtaining Medical relief by permanent Paupers," which applies only to such persons, but not to those who are not permanently paupers, numbers of whom must be attended by the doctor, and the Boards of Guardians are at liberty to pay for both sets of paupers in any way they please; and in one district in Lambeth opposite the seat of government and to the houses of parliament, the sum they have been pleased to allow, when duly divided, amounts to eight pence per head for each sick person.

If the Poor-Law Commissioners had stated in the medical order now issued that the combined reports of the various assistant Commissioners, and of the medical profession at large, had proved that a sum not less than two shillings and sixpence ought to be paid

for each person on the pauper list, and not less than six shillings and sixpence for each casual pauper, and had enforced such payments, as well as those which have been recommended for attendance on the workhouse, the subject would have been complete; the principle would have been carried out, the detail would have been perfected, and the Boards of Guardians would have had a just right to insist on the strict attendance of the medical officers, and that the poor should not be neglected.

I take the liberty of suggesting to the members of the medical profession that their efforts should be made to strengthen the hands of the Poor-Law Commissioners in such manner as will enable them to declare not only the principle of remuneration they are pleased to select, but also to carry out and enforce its details in a manner which shall be just and satisfactory to them. I believe they will best effect this object by prevailing on the various Members of Parliament of their respective towns and places to wait upon the Secretary of State for the Home Department, and to induce him to empower the Poor-Law Commissioners to abate the nuisance which their defective authority has occasioned.

If the gentlemen of the London district who have done the Vice Presidents and myself the favour to confer with us on these subjects shall wish it, I will present any two of them to the members for Middlesex, who will, I am satisfied, give them their best assistance.

The humanity, kindness, and charity, of Mr. Byng, and his desire to amend the condition of the poor, are proverbial. Their younger member, Colonel Wood, is not behind him in the same good feelings, and will support the members of the medical profession in every thing that is reasonable, right, and just; and my efforts, as long as I am permitted to make them, shall not be wanting in the proper and highest quarters.

I am, my dear sir,

Yours very truly,

G. J. GUTHRIE.

4, Berkeley-street, Berkeley-square,  
12th March, 1842.

T. Howell, Esq., Clapton.

## LETTER ACCOMPANYING GENERAL MEDICAL REGULATIONS.

SIR,

ONE of the most important subjects considered by the Select Committee of the House of Commons, which in 1838 enquired into the operation of the Poor Law Amendment Act, was the medical relief of the poor.

After examining numerous witnesses on

this subject, the Committee decided to recommend no legislation by Parliament on medical relief, but having expressed their opinion that the existing arrangements might in several points be ameliorated, and having indicated several improvements, they left the introduction of these and other alterations to the discretion of the Poor Law Commissioners.—(Report, p. 25.)

The Commissioners, having given the entire subject a mature consideration, fully stated their views upon it in their Report on the Further Amendment of the Poor Laws (31st of December, 1839), p. 73—81. They subsequently by a circular letter, dated the 6th of March, 1841, (see 7th Annual Report, p. 8), called the attention of the Boards of Guardians to their suggestions in this Report; and requested to be informed of the opinion of the Boards as to the expediency of adopting those suggestions.

The answers which were returned by the Boards of Guardians to this circular (which are partially abstracted in the Seventh Annual Report of the Commissioners, page 9—14,) shewed, however, that no extensive change in the existing arrangements was likely to originate with the Boards of Guardians. Accordingly, as much dissatisfaction continued to prevail amongst many members of the medical profession, and as little progress had been made towards carrying into effect some of the recommendations of the Committee, the Commissioners have thought themselves called upon to select the most important points of the subject, and to issue generally to the Unions such regulations upon these points as appear to be needful and prudent.

The following are the heads of the accompanying order:—

1. Tenders for medical attendance.
2. Qualifications of medical officers.
3. Maximum amount of area and population of medical districts.
4. Rates of payment of medical officers in certain surgical and midwifery cases.
5. Substitutes for Medical officers during their incapacity to act.
6. Arrangement for affording medical relief to permanent paupers without a special order in each case.
7. Continuance in office of medical officers.

The Commissioners subjoin some explanatory remarks upon the main provisions of the order.

Arts. 1 and 2 are intended to abolish the system of requiring tenders for the services of medical officers; according to the views of the Commissioners, explained in their Report on the Further Amendment of the Law, p. 76—8. These articles, however, do not prohibit advertisements for the services of medical officers, provided such advertisements specify the remuneration fixed

or approved by the Commissioners. It is the wish of the Commissioners that the competition of the candidates should turn upon their respective characters and skill, and not on the sum at which they may be severally willing to undertake the office.

Arts. 3—5 relate to the qualifications of medical officers.

The Commissioners think it desirable that every medical officer should possess both a medical and a surgical qualification, and therefore they have required the three sorts of double qualification which are specified in Art. 3, Nos. 1, 2, and 3.

With respect to the second qualification in No. 3, see 55 G. 3, c. 194 (the Apothecaries' Act).

The Commissioners thought themselves bound to consider the qualification stated in Art. 3, No. 4, as virtually a double qualification, according to the decision of the Court of Exchequer, in *Steavenson v. Oliver*, 8 Meeson and Welsby, 234. The qualification is limited to warrants or commissions, dated previously to 1st August, 1826; inasmuch as the Act of 6 G. 4, c. 133, (which brought persons possessing this qualification within the benefit of the Apothecaries' Act,) expired on that day.

Art. 4, provides a means by which a duly qualified medical man not possessing any of the four qualifications required by Art. 3, may, in case of necessity, be appointed a medical officer: and Art. 5 enables an exception to be made in favour of existing medical officers.

The Commissioners have limited the provisions of their order to qualifications proceeding from an English source. In case, however, any medical man possesses an English qualification of physician or apothecary, together with a Scotch or Irish surgical qualification, the Commissioners will consider such person as virtually possessing a double qualification; and they will admit him as an officer, (if otherwise fit for the office) under Art. 4, upon application from the Guardians for that purpose.

Arts. 6—9, relate to the maximum area and population of medical districts.

The Committee of 1838 expressed an opinion that the medical districts seemed to be in some instances inconveniently large, and that they should be of such a size as to admit of an easy access of the medical man to his patients. (Report, p. 25.) The Commissioners have constantly borne in mind this recommendation of the committee, and have already required the division of many medical districts which seemed to have too large an area. A considerable improvement has thus been already effected in many individual cases; but the Commissioners think that the time is now arrived when it is desirable for them to make a general regu-

lation on the subject, and they have accordingly inserted one in these articles, accompanied with such limitations and exceptions as the circumstances of the case appeared to require.

The Commissioners are aware that in many districts containing almost exclusively a poor population, even the limit of 15,000 persons may admit of a number of patients too large for the care of one medical officer; especially if the district consist partly of a town and partly of rural parishes. Under such circumstances, it would generally be practicable for the Guardians to divide the district between two or more duly qualified medical practitioners. In like manner it may happen that a district consisting of an area less than 15,000 acres may contain a large population, and that the Guardians may be able to divide it with advantage. The Commissioners therefore do not by the limits fixed in Art. 6 imply that no district is objectionable, or that every district will be sanctioned by them, which is within these limits.

With respect to Art. 9 it may be observed, that the measure of acreage adopted in Art. 6 cannot be applied to Wales, as there are no available means of obtaining the requisite information in that part of the country; and the Commissioners have accordingly prescribed for Wales a limit, not of area, but of distance, which, though less convenient, is the best which the case permits. Moreover, the physical circumstances of Wales, and the small number of resident medical practitioners, render it necessary to permit the formation of medical districts larger than those in most parts of England.

Art. 10—13.] It is the earnest wish of the Commissioners to carry into effect the recommendation of the Committee, that "the remuneration of medical officers should be such as to ensure proper attention and the best medicines," (Report, p. 25); and the Guardians will doubtless perceive that unless the medical officers be adequately remunerated, no vigilance on their part will suffice to secure proper attendance and medicines to the poor under his care.

The Commissioners still retain the opinions expressed in their Report on the Further Amendment of the Law, p. 78—80, and since repeated to the Board of Guardians in their Circular of March, 1841, as to the advantages of a joint system of fixed salary and payment per case for medical officers; and they will remark incidentally that unless a system of payment per case is adopted, the recommendation of the Committee that the medical relief should be a parochial and not a union charge (Report, p. 24) cannot be carried into effect.

The wide differences between the circumstances of different Unions, especially in respect of the density and character of the



population, render it, however, nearly impossible for the Commissioners to prescribe the universal introduction of this or any other mode of payment.

It appeared, nevertheless, to the Commissioners, that it was possible for them to furnish a universal scale of payment for the surgical and obstetrical services specified in Arts. 10—13; the nature of which is such that they might, under certain circumstances, be properly excluded from the salary of the medical officer, and be paid at higher rates than ordinary medical cases. The Guardians will thus be enabled to approximate to the views of the committee, by making these a parochial charge.

The operations enumerated in Art. 10, are intended to provide for cases of urgency (principally those arising from accidents), which cannot be sent to a public hospital with safety and propriety. The payments for operations are limited to operations on out-door poor, and do not include those performed in the workhouse. It appears to the Commissioners, that the continued attendance at the house of the patient in severe surgical cases, usually forms the most burdensome part of the extra service of the medical man: whereas the constant visits of the medical officer to the workhouse enable him to attend a patient in the workhouse without always making a visit for that express purpose. Moreover, when a patient can be removed to a workhouse, or when he has long been the subject of medical treatment in the workhouse, he may in general be removed with safety or propriety to an infirmary or hospital; and the Commissioners think it desirable that, where the distance or other circumstances do not present serious obstacles, paupers should enjoy the practised skill and combined judgment of the medical men usually connected with such establishments. While, therefore, the Commissioners would discourage the performance of important surgical operations in workhouses, they are ready to sanction any reasonable subscription to a hospital or similar establishment by a Board of Guardians for the Union.

The payments are intended to cover not only the operation, but also the attendances after the operation, which, in severe cases of this sort ought usually to be numerous; and, therefore, they are limited to cases in which the patient survives the operation more than thirty-six hours, and receives several subsequent attendances. Cases in which the patient does not survive the operation thirty-six hours, or in which he does not receive several subsequent attendances, may be included in the contract of the medical officer with the Guardians.

Art. 15.] If any medical officer has a partner or assistant, who is a duly qualified

medical man, he may name such partner or assistant under this article.

The medical officer will be considered by the Commissioners as responsible for the skill and diligence of the person named by him as a substitute.

Arts. 16—19 are intended to facilitate the obtaining of attendance and medicines by the permanent paupers; a class whose destitution is acknowledged, and which necessarily includes the most helpless portion of the community.

Art. 20, places the medical officer on the same footing with the other officers, as to the period of his office, unless such period be specially limited at the time of his appointment. It does not seem desirable to exclude the Guardians from the opportunity of improving the arrangements respecting medical relief as the circumstances of the several districts may permit, and therefore it is not advisable to deprive them of the power of limiting the period of the medical officer's services.

The Commissioners intend, in a short time, to issue a general order prescribing the adoption, by the medical officers, of the nomenclature, of diseases now in use under the authority of the Registrar-General, which will insure greater uniformity and precision of language in the returns made by the medical officers, and will furnish a convenient interpretation of many of the more obscure scientific names of diseases.

(Signed by Order of the Board,)

EDWIN CHADWICK, Secretary.

Poor-Law Commission Office, Somerset House, March 12, 1842.

*The Clerk to the Guardians  
of the Union.*

## SCHEDULE ISSUED BY THE POOR-LAW COMMISSIONERS.

*To the Guardians of the Poor* of the several Unions named in the schedule hereunto annexed.

To the clerk or clerks to the justices of the petty sessions, held for the division or divisions in which the parishes and places comprised within the said Unions are situate.

And to all others whom it may concern.

WE, the Poor-Law Commissioners, in pursuance of the authorities vested in us by an Act passed in the fifth year of the reign of His late Majesty King William IV. intituled "*An Act for the Amendment and better Administration of the Laws relating to the Poor in England and Wales*," do hereby order, direct, and declare, with respect to each and every of the unions named in the schedule hereunto annexed, as follows:—

*Tender.*

Art. 1.—It shall not be lawful for the Board of Guardians of any of the said Unions, by advertisement, or other public notice, printed or written, to invite tenders for the supply of medicines, or for the medical attendance on any of the paupers within any such Union, unless such advertisement or notice shall specify the district or place for which such supply of medicines and such attendance is required, together with the amount of salary or other remuneration fixed or approved by the Poor-Law Commissioners, as the consideration for such supply of medicines and such attendance, or either of them.

Art. 2.—All salaries or other payments to any medical man, fixed by any of the said Board of Guardians; and every contract made by any of the said Board of Guardians with any medical man, in pursuance of any advertisement or other notice, inviting medical men to tender their services at a sum or sums not named in such advertisement, or notice, shall be deemed to be fixed or made in opposition to the rules and regulations of the Poor-Law Commissioners in force in this behalf; and all payments made towards such salary, or in fulfillment of such contract, shall be disallowed in the accounts of the parties authorising or making the same.

*Qualification.*

Art. 3.—It shall not be lawful for any of the said Board of Guardians to appoint any person to be a medical officer, unless such person, at the time of his appointment, shall possess one of the four following qualifications; that is to say,—

1. A diploma from the Royal College of Surgeons in London, together with a degree in medicine from an University in England, legally authorized to grant such degree, or together with a diploma or license of the Royal College of Physicians of London.

2. A diploma from the Royal College of Surgeons in London, together with a certificate to practise as an apothecary from the Society of Apothecaries of London.

3. A diploma from the Royal College of Surgeons in London—such person having been in actual practice as an apothecary on the first day of August, one thousand eight hundred and fifteen.

4. A warrant or commission as surgeon or assistant-surgeon in Her Majesty's Navy, or as surgeon or assistant-surgeon or apothecary in Her Majesty's Army, or as surgeon or assistant-surgeon in the service of the Honourable East India Company, dated previous to the first day of August, one thousand eight hundred and twenty-six.

Art. 4.—Provided always, that if it shall not be practicable for the Board of Guardians

to procure a person residing within or near the district in which he is to act, and duly qualified in one of the four modes recited in Art. 3, to attend on the poor in such district, or that the only person resident in or near such district, and so qualified, shall have been dismissed from office under the seal of the Poor-Law Commissioners, or shall be judged by the Poor-Law Commissioners to be unfit or incompetent to hold the office of medical officer, then and in such case the Board of Guardians shall cause a special minute to be made, and entered on the usual record of their proceedings, stating the reasons which, in their opinion, make it necessary to employ a person not qualified as by Art. 3.; and shall forthwith transmit a copy of such minute to the Poor-Law Commissioners for their consideration; and the Poor-Law Commissioners may, if they fit so to do, permit the employment by such Board of Guardians of any person duly licensed to practice as a medical man, although such person shall not be qualified in one of the four modes required by Art. 3.

Art. 5.—Provided also, that it shall be lawful for the Board of Guardians, with the consent of the Poor-Law Commissioners first had and obtained, to continue in office any medical officer duly licensed to practise as a medical man already employed by any such Board of Guardians, although such medical officer may not be qualified in one of the four modes required by Art. 3.

*Maximum area and population of medical districts.*

Art. 6.—It shall not be lawful for the Board of Guardians to assign to any medical officer, to be by them hereafter appointed, a district which shall exceed in extent the area of fifteen thousand statute acres, or which shall contain a population exceeding the number of fifteen thousand persons, according to the then last enumeration of the population published by authority of Parliament.

Art. 7.—Provided always that where any medical officer may on the day on which this order shall come in force, hold any district exceeding either in area or population the limits fixed in Art. 6, and such medical officer may have been appointed to such district for any time not exceeding twelve calendar months, he shall continue to hold his office, if not otherwise removed therefrom, up to the expiration of the time for which he was so appointed; but that where any medical officer shall have been appointed to any district exceeding the said limits in area or population for any space of time longer than twelve calendar months from the day in which this order shall come into force, the continuance of such officer in his office shall cease and determine on the twenty-fifth day of March, one thousand eight hundred and forty-three, or

whenever the term of such appointment may expire, whichever shall first happen.

Art. 8.—Provided also, that if it shall be impracticable for the Board of Guardians to divide any Union into districts containing respectively an area and population less than is specified in Art. 6, then and in such case the Board of Guardians shall cause a special minute to be made, and entered on the usual record of their proceedings, stating the reasons which in their opinion make it necessary to form a district exceeding the said limits, and shall forthwith transmit a copy of such minute to the Poor-Law Commissioners for their consideration; and if the Poor-Law Commissioners shall signify their approval thereof to such Guardians, then, and in such case, but not otherwise, such Guardians may proceed to appoint a medical officer for the said district.

Art. 9.—Provided also, that the limits of fifteen thousand statute acres prescribed in Art. 6, shall not apply or be in force in respect to any medical district situate wholly or in part within the Principality of Wales; but no medical district situate wholly or in part within that Principality shall be assigned to any medical officer residing more than seven miles from any part of any parish included within such district, unless the formation of such district shall have been specially sanctioned by the Poor-Law Commissioners in the same manner as is directed in Art. 8.

*Rates of Payment in Surgical and Midwifery Cases.*

Art. 10. No salary of any district medical officer, or contract made by any Board of Guardians with a district medical officer, shall include the remuneration for the operations and services of the following classes performed by such medical officer in that capacity for any out-door pauper, but such operations and services shall be paid for by the Board of Guardians according to the rules specified in this Article.

1. Amputations of Leg, Arm, Foot, or Hand . . . .	}	£ s. d.
2. The operation for Strangulated Hernia . . . .		
3. The operation of trephining for fractured skull . . . .		
4. Treatment of compound fractures of the thigh . . . .		
5. Treatment of compound fractures or compound dislocations of the leg. . . .		
6. Treatment of simple fractures or simple dislocations of the thigh or leg . . . .	}	3 0 0
7. Treatment of dislocations or Fractures of the Arm. . . .		

The above rates to include the payment

for the supply of all kinds of apparatus and splints.

Provided that in every such case the patient survives the operation not less than thirty-six hours, and that he has required and has received several attendances after the operation by the medical officer, who has performed the same.

Provided also, that except in cases of sudden accident immediately threatening life, no medical officer shall be entitled to receive such remuneration for any amputation or for the operation of trephining unless he shall before performing such amputation or operation have obtained at his own cost the advice of some Member of the Royal College of Surgeons of London, or of some Fellow or Licentiate of the Royal College of Physicians of London, and shall produce to the Board of Guardians a certificate from such Member of the Royal College of Surgeons, or such Fellow or Licentiate, stating that in his opinion it was right and proper, that such amputation or operation should be then performed.

Art. 11.—All trusses furnished by a medical officer in consequence of any contract with or direction of a Board of Guardians, shall be charged by such medical officer at the cost price, including carriage, and be paid for accordingly by such Board of Guardians.

Art. 12.—The delivery of any woman in childbirth and the subsequent medical attendance upon her by any medical officer, in that capacity, whether in or out of the workhouse, shall be paid for by the Board of Guardians in the manner specified in this and the following article; that is to say:

In cases in which any such medical officer shall be called on by order of any person legally qualified to make such order, to attend any woman in or immediately after childbirth, or shall be required, under circumstances of difficulty or danger, without any order, to visit any such woman actually receiving relief, or whom the Board of Guardians may subsequently decide to have been in a destitute condition, such medical officer shall be paid for his attendance and medicines by a sum of not less than ten shillings, nor more than twenty shillings, as the Board of Guardians may determine, regard being had to the distance from the residence of such medical officer.

Art. 13.—Provided that in any special case in which great difficulty may have occurred in the delivery, or long subsequent attendance may have been requisite, such medical officer shall receive the sum of two pounds; and if in any such case, any dispute shall arise between the board of Guardians, and such medical officer, such medical officer shall not receive the said sum until the Poor-Law Commissioners shall have signi-



fied their approval of such a payment on a report made by such medical officer, and transmitted to them through the Board of Guardians of the said Union.

*Substitutes for Medical Officers.*

Art. 14.—Every medical officer appointed, or to be appointed, in pursuance of the rules, orders, and regulations of the Poor-Law Commissioners, shall be bound to visit and attend personally the poor persons entrusted to his care, and shall be responsible for such visits and attendances, and shall so keep any weekly return prescribed by the orders of the Poor-Law Commissioners, as to show when the visit or attendance made, or given to any pauper was made, or given by any person other than himself.

Art. 15.—Every medical officer to be hereafter appointed, shall, if practicable, within twenty-one days of the time of his appointment, name to the Board of Guardians some legally qualified medical practitioner to whom application for medicines or attendance may be made in the case of his absence from home, or other hindrance to his personal attendance, and who will supply the same at the cost of such medical officer, and the name and residence of every medical practitioner so named shall be forwarded by the clerk to the Guardians to each relieving officer, and to the overseers of every parish in the Union.

*Mode of obtaining medical relief by permanent paupers.*

Art. 16.—The Board of Guardians shall, once in every six months, cause to be prepared a list of all such aged and infirm persons, and persons permanently sick or disabled, as may be actually receiving relief from such Board of Guardians, and residing within the district of each medical officer of the Union, and shall from time to time furnish to each medical officer a copy of the list aforesaid.

Art. 17.—Every person whose name shall be inserted in such list, shall receive a ticket in the following form, and shall be entitled on the exhibition of such ticket to the medical officer of his district to obtain such advice, attendance, and medicines, as his case may require, without any order from the relieving officer, overseer, or other authority.

*Form of Ticket.*

_____ UNION.	
Date _____	
Good until the _____ day of _____ 184	
Name of Pauper _____	
Residence of Pauper _____	
Name of Medical Officer _____	
Residence _____	
Usual hour at which he is at home _____	

Art. 18.—Such medical officer shall on the exhibition to him of the said ticket, and on application made on behalf of the party to whom such ticket was given, be held responsible for affording such advice, attendance, and medicines, as he may be bound to supply, in the same manner as if he had received in each case a special order from the Board of Guardians, or from any officer, to afford such advice, attendance, and medicines.

Art. 19.—Provided always that if on complaint of any medical officer it be made to appear to the Board of Guardians, that any poor person who may have been furnished with a ticket in the aforesaid form shall have wilfully applied to, or sent for the medical officer, on frivolous grounds, such poor person shall for the first time be admonished by the Board of Guardians, and on a repetition of such frivolous application, such poor person shall be deprived of his ticket, and thenceforth, until the next half-yearly list be made out, shall not be empowered, except in cases of sudden and urgent necessity, to demand advice, attendance, or medicines, from such medical officer without an order from the Board of Guardians, a relieving officer, or an overseer of some parish in the union.

*Continuance in Office of Medical Officers.*

Art. 20.—Every medical officer duly appointed in pursuance of the orders and regulations of the Poor-Law Commissioners shall, unless the period for which he is appointed, be expressly entered on the Minutes of the Guardians at the time of making such appointment, or be expressly inserted in a written contract entered into by such medical officer, and such period have been subsequently approved by the Poor-Law Commissioners, continue in office until he may die or resign, or become legally disqualified to hold such office, or be removed therefrom by the Poor-Law Commissioners.

*Explanation of terms.*

Art. 21.—Whenever the word "Union" is used in this order, it shall be taken to include not only an union of parishes formed under the provisions of the hereinbefore recited Act, but also any union of parishes incorporated or united for the relief or maintenance of the poor under any local act of Parliament.

Art. 22.—Whenever the word "Guardians" is used in this order, it shall be taken to include not only guardians appointed or entitled to act under the provisions of the said hereinbefore recited act, but also any governors, directors, managers, or acting guardians entitled to act in the ordering of relief to the poor from the poor-rates under any local Act of Parliament.

Art. 23.—Whenever the words "Board of Guardians" are used in this order, they

shall be taken to mean not only a board of guardians competent to act under the provisions of the said hereinbefore recited Act, but also such guardians, or such a number of any guardians as are competent to order relief to the poor from the poor-rates under any local Act of Parliament.

Art. 24.—Whenever the word “parish” is used in this order, it shall be taken to signify any parish, township, village, or other place separately maintaining its own poor.

Art. 25.—Whenever the word “medicines” is used in this order, it shall be taken to include all medical and surgical appliances; and whenever the words “medical attendance” are used in this order, they shall be taken to include surgical attendance.

Art. 26.—Whenever the words “medical officer” are used in this order, they shall be taken to include any person duly licensed as a medical man, who shall have contracted with any Board of Guardians for the supply of medicines, or for medical attendance.

Art. 27.—Whenever, in describing any person or party, matter or thing, the word importing the singular number or the masculine gender only is used in this order, the same shall be taken to include, and shall be applied to, several persons or parties as well as one person or party, and females as well as males, and several matters or things, as well as one matter or thing, respectively, unless there be something in the subject or context repugnant to such construction.

Art. 28.—Whenever in this order any article is referred to by its number, the article of this order bearing that number shall be taken to be signified thereby.

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**LAST REPORT  
FROM THE  
NATIONAL VACCINE INSTITUTION.**

(Ordered by the House of Commons, to be  
printed, 8th March, 1842.)

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*To the Right Hon. Secretary of State for  
the Home Department.*

SIR,—We feel a sincere satisfaction in being able to assure you that we have had abundant evidence, in the course of the last year, of the increasing confidence of the country in the protective power of vaccination; though this satisfaction is somewhat diminished by the frequent avowal of our correspondents of their inability to maintain a supply of genuine authentic lymph without the aid of that afforded by this national establishment.

Among other facts which prove the importance attached to the existence of this board, we may mention, that small-pox having broken out in the Orkney Islands,

immediate recourse was had to the board, and a large quantity of lymph sent thither, which appears to have arrested the progress of this horrible malady, and probably to have placed the inhabitants of those distant parts of her Majesty's dominions beyond the fear of its recurrence.

We have vaccinated, at the several stations within and in the immediate neighbourhood of the metropolis, 15,361 subjects; and have sent out to our correspondents and to the colonies, at the instance of Government, 152,668 charges of vaccine lymph.

We have, &c.

(Signed) HENRY HALFORD.

G. J. GUTHRIE.

EDWARD J. SEYMOUR, M.D.

CLEMENT HUE, M.D. Registrar.

National Vaccine Establishment,  
March, 1842.

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**SUFFOCATING COUGH.**

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*To the Editor of the Medical Gazette.*

SIR,

I BELIEVE suffocating cough has not at present any remedy proposed for it, but a smart tap on the back. This is a practice I think not so good as might be proposed or wished for, and one that I would not allow to be practised on myself, nor do I think there are many who would. If we consider a little what takes place, we must see that the constant cough during the paroxysm allows of scarcely any other action of the lungs than forcible expiration, and might thus proceed if the lungs were exhausted sufficiently to cause closure of the glottis. From these considerations, it follows that our endeavours must be directed in such a way as to prevent the exhaustion of the lungs going on. This brings me to the method I adopted, or rather invented, years ago, for the relief of this very distressing affection. It is so simple that I am surprised it has not been proposed before. My method of proceeding is, to close the patient's nostrils with my thumb and forefinger during expiration, and leaving them free during inspiration, and in a very short time the patient will be relieved from his paroxysm. I have followed this plan whenever I have had occasion to do so, and always with success. In confirmation of this practice, I think I cannot give a more illustrative case than the following:—A near and dear relative, afflicted with hemiplegia nearly thirteen years, consequent on an attack of apoplexy, of very advanced age, being rather more than 80 when she died, during the last two years of her life she was repeatedly seized with paroxysms of suffocating cough, which threatened at times to suffocate her—in fact she coughed some-

times till her face became of a bluish tint, and I have been in considerable doubts which way the balance would turn. When those paroxysms first occurred, I was not prepared with any remedy, but after a time, as her deglutition became more affected, they occurred so often, that I was in a manner obliged, if possible, to devise a remedy, and which was my method described above, and which never failed to relieve her. I think a case more in point, or one more disadvantageous, cannot well be imagined.

Yours respectfully,  
G. ROBINSON.

10, Chapel St. Grosvenor Sq.  
Feb. 11, 1842.

NORTH OF ENGLAND MEDICAL  
ASSOCIATION.

At a meeting of the council of the North of England Medical Association, held at Newcastle upon Tyne, March 16th, 1842, Dr. Headlam, President, in the Chair—

The letter of Mr. J. B. Maughan relative to an alleged breach of professional etiquette, which appeared in the MEDICAL GAZETTE of January 7, the Lancet of January 15, and the Provincial Medical and Surgical Journal of January 15, was taken into consideration, and the following resolutions adopted:—

1. That Mr. Maughan merits the approbation of the council for the gentlemanly forbearance with which he has conducted himself in this transaction.

2. That Dr. White was in error when he consented to inquire of the patient under the care of which surgeon she wished to remain.

3. That the conduct of Mr. Annandale in removing the splints and bandage from a broken limb which had been reduced by another surgeon (more especially when the immediate attendance of that surgeon was expected) was improper, and that his appropriation of the patient of another practitioner was contrary to the rules of etiquette by which professional gentlemen should be guided in their deportment towards each other.

4. That the council sincerely regret that the conduct of any of their professional brethren should have given occasion for the preceding resolutions. They earnestly hope that, in future, a better feeling will exist amongst medical men, and that similar cases will not recur.

5. That copies of these resolutions be sent to the journals in which Mr. Maughan's letter was published.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, March 18, 1842.

J. T. R. Burroughs.—F. H. Simpson.—Joseph Vardy.—Peter Milner.—Spencer Weston.—T. M. Kendall.—R. Ransom.—D. S. Moore.—C. Chubb.—E. J. Waring.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
CERTIFICATES.

Thursday, March 10, 1842.

A. Catherwood, 21, Charles Square, Hoxton.—A. B. Middleton, Market Drayton, Salop.—F. Andrews, Newport, Isle of Wight.—George F. White, 8, Haymarket, London.

Thursday, March 17, 1842.

H. Hayes, Hales, Owen.—H. S. Taylor, Guildford.—E. Evans, Devonport.

A TABLE OF MORTALITY FOR THE  
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, March 12, 1842.

Small Pox .....	1
Measles .....	16
Scarlatina .....	12
Hooping Cough .....	49
Croup .....	18
Thrush .....	3
Diarrhoea .....	7
Dysentery .....	0
Cholera .....	0
Influenza.....	2
Typhus .....	26
Erysipelas .....	1
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	134
Diseases of the Lungs, and other Organs of Respiration.....	308
Diseases of the Heart and Blood-vessels ....	18
Diseases of the Stomach, Liver, and other Organs of Digestion .....	63
Diseases of the Kidneys, &c.....	7
Childbed .....	5
Ovarian Dropsy .....	1
Disease of Uterus, &c. ....	2
Rheumatism .....	2
Diseases of Joints, &c. ....	5
Ulcer .....	1
Fistula .....	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat .....	100
Old Age or Natural Decay.....	69
Deaths by Violence, Privation, or Intemperance .....	37
Causes not specified .....	3
Deaths from all Causes .....	890

NOTICES.

Dr. Watson's Lectures will be resumed next week, and concluded in the present volume.

M. Lugol's Lectures have been postponed in consequence of his having been prevented by illness from revising them. We expect to be able to give them in our next volume.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, APRIL 1, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Dyspepsia. Physiology of digestion.  
Symptoms of Dyspepsia: Treatment  
and prevention, dietetic and medicinal.*

It is my intention to appropriate this evening's lecture to a cursory account of *dyspepsia*: by which I mean some evident derangement in the natural process of digesting and assimilating our food; and more especially, a faulty performance of the functions of the *stomach*. Indigestion is the prevailing malady of civilized life. We are more often consulted about the disorders that belong to eating and drinking, than perhaps about any others: and I know of no medical topic concerning which there is afloat, both within and beyond the profession, so much ignorant dogmatism and quackery.

Cullen, in his definition of *dyspepsia*, enumerates the various symptoms, by the occurrence of more or fewer of which, that complaint is most commonly manifested. "Anorexia, nausea, vomitus, inflatio, ructus, rumination, cardialgia, gastrodynia:—pauciora saltem vel plura horum simul concurrentia, plerumque cum alvo adstricta, et sine alio vel ventriculi ipsius, vel aliarum partium, morbo."

The variety in the actual presence and combinations of these symptoms is very great: and any attempt to give a perfect or complete history of *dyspepsia* in these lectures is quite out of the question. But I will endeavour to draw such a general outline of the disorder as may assist and direct your observation of it hereafter.

I shall first take a brief view of the *pathology* of indigestion, so far as it is under-

stood: and to make this intelligible, it will be necessary to interweave something of the *physiology* of the subject. To these preliminary considerations, I shall add a short comment upon the several symptoms of *dyspepsia*, enumerated in Cullen's definition: and lastly, I shall state what I know respecting the means of curing, and of preventing, this familiar disorder.

The conditions of healthy digestion are these: that the food should be masticated, mixed with saliva, and swallowed into the stomach: that in the stomach it should be reduced to a semi-fluid consistence, and converted into a uniform pulp, called *chyme*: that the *chyme* should be transmitted through the pylorus into the duodenum, and there mixed with the bile, the pancreatic secretion, and the intestinal mucus; in consequence, as it would seem, of which admixture, the whole is separated into two parts; viz. the *chyle* or the nutritive portion of the food, now in a fit state to be taken up by the lacteals which open upon the mucous surface of the intestines, and to be carried by them into the blood; and the excrementitious portion, which at length is conveyed out of the body.

The food is dissolved and transformed, in the stomach, by the chemical agency of the *gastric juice*. This is a secretion peculiar to the stomach. All that need be stated of it here—almost all indeed that is known—is, 1st, that it oozes forth in minute drops from the mucous surface; but only when food (or some solid substance), is present in the stomach: and 2ndly, that it is always *acid*. It appears to owe its solvent power to a special principle, which chemists have named *pepsin*.

The food, having arrived in the stomach, is moved about, by a sort of churning or revolving movement, and mixed with the gastric juice, and gradually changed into *chyme*: which also is acid. Finally, the *chyme* is propelled by degrees into the duodenum by the pressure of the transverse

band of muscular fibres which embraces the pyloric extremity of the stomach. The time in which the whole operation is completed varies from two to four or five hours.

Liquids introduced into the stomach disappear much more speedily; either by direct absorption, or through the pylorus.

All this we know, not from mere speculation on the anatomy and uses of the organ, but from actual observation. An American physician had, for several months in succession, the curious privilege of looking, whenever he pleased, into a healthy human stomach, and of watching its condition, its movements, and its contents, during the process of digestion. A young Canadian had a portion of the skin, muscles, and ribs, of the left side of the body blown away in a gun-shot wound, which laid open the stomach also. He recovered from this frightful injury with a permanent aperture in the side, communicating directly with the stomach. Through this loop-hole Dr. Beaumont was allowed to introduce various articles of food; and to withdraw from time to time the gastric secretions; and the aliment, in the different stages of its digestion. He has published a very interesting account of these experiments, which have set at rest some points in the physiology of the stomach that were previously uncertain. I shall embody his deductions in what I have farther to say on the subject.

In order that digestion may be perfect and easy, it is requisite that the food should be in a state of minute division. This object is attained by *mastication*. A weak dyspeptic stomach acts slowly, or not at all, on solid lumps and tough masses of food. The delayed morsels undergo spontaneous changes, promoted by the mere warmth and moisture of the stomach: gases are extricated: acids are formed: perhaps the half-digested mass is at length expelled by vomiting; or it passes undissolved into the duodenum, and becomes a source of irritation and disturbance during the whole of its journey through the intestines. Here then we have one common cause of dyspepsia; and an easy and obvious preventive. Dyspeptic persons should not eat in a hurry, as busy men, and studious and solitary men, are apt to eat. They are to be cautioned against *bolting* their food: it must be well ground in the mill that nature has provided for that purpose. I am not at all sure that the increased longevity of modern generations is not, in some degree, attributable to the capability of chewing their food which the skill of the dentist prolongs to persons far advanced in life.

There are certain things upon which the gastric juice has no power. The green colouring matter of certain vegetables; the husks of seeds; the rinds of many fruits. You may perhaps have observed that dried

currants, and the pips of apples, swallowed entire, reappear, unchanged, among the egesta. Whatever passes the stomach untouched by the gastric liquor, passes undissolved through the whole of the alimentary canal; provoking disorder sometimes in its transit; forming sometimes a nucleus for intestinal concretions. These substances are therefore unfit for a weak stomach. When the digestive powers are active, and the bowels slow, they may perhaps occasionally be even useful. Thus brown bread—*i. e.* the indigestible bran, or tegument of the kernel of wheat—stimulates the peristaltic motions of the intestines, and averts, in certain persons, the necessity of more direct purgatives. Unbruised mustard seed, once so much in vogue, owed whatever virtue it possessed to this principle. But if these intractable substances fail to excite the proper action of the bowels, they are apt to accumulate, and to lay the foundation of serious disease.

Indigestible matters, to which the pylorus refuses a passage, may remain in the stomach, and disturb its functions, for days, or even sometimes for weeks, together. If we could ascertain their presence, an emetic would be the remedy. And sooner or later vomiting is set up, and the offending substance expelled. I lately saw a mass of hard curd—a small cream cheese in respect to consistence—which was thrown up after several days of severe gastric pain and disorder. The relief was immediate and complete. The patient had been taking large quantities of cream with his tea and coffee. In another person, a similar fit of indigestion terminated in the ejection of a mass of snuff. This is no unusual source of derangement of the stomach among those who use lavishly that nasty luxury.

The essential change which the chyme undergoes after leaving the stomach, appears to consist in its separation into two parts: namely, into chyle, which is taken up by the lacteals; and into excrement, which is discharged from the body. Any undissolved portions of the food become attached to this last part. We do not know exactly what is the function or agency of the pancreatic liquor; but with regard to the bile our knowledge is somewhat more definite. The acid developed in the stomach combines in the duodenum with the alkali of the bile, and is more or less neutralized. Dr. Prout conjectures that in a healthy state of the organs it is entirely neutralized. Bile is, moreover, the natural stimulus of the intestines: when its secretion is stopped, or its passage into the duodenum prevented, digestion and assimilation may go on, but the bowels are usually sluggish. The hepatic secretion has doubtless other important uses; but with these we are not at present concerned. It is pretty evident that the state of the biliary



functions can have no direct influence in the production of mere dyspepsia. When the bile is deficient in quantity, or vitiated in quality, the *nutrition* may be thereby affected. And when the functions of the stomach and the functions of the liver are both disordered, it *may be* that the former organ sympathizes indirectly with the morbid state of the latter; or it *may be* that one and the same cause operates in producing the derangement of both organs.

Let us now review the symptoms of dyspepsia which are mentioned in Cullen's definition. The first of these is *anorexia*: want of the natural appetite. Sometimes this is almost the only symptom observable. The patient is warned, by loss of appetite, not to take too much food; he refrains instinctively from certain kinds of food; or he feels perhaps absolute repugnance and disgust at the very thought of eating. Various have been the speculations respecting the immediate cause of hunger. It has been ascribed to the action of the gastric juice upon the surface of the empty stomach. But during health, the gastric juice is never present in an empty stomach. Neither can the appetite depend upon contraction of the muscular fibres of the stomach; for the empty stomach, during health, is always contracted upon itself. No doubt the sensation of hunger, like all other sensations, arises from some particular condition of the *nerves* of the part. It returns periodically, acknowledging in this respect the influence of habit. It is sensibly affected by agencies which operate upon and through the nervous system. The receipt of a piece of bad news will destroy, in a moment, the keenest appetite.

Sometimes there is no anorexia. The appetite may even be morbidly craving and ravenous; or capricious and uncertain.

When defect of appetite is the only symptom, it may be remedied, often, by the employment of bitters, or of the mineral acids, taken twice or thrice daily, for some time together. It would be out of place for me to speak in detail of particular medicines of this kind: it is enough if I indicate quina, columbo, gentian, quassia; the dilute sulphuric and nitric acids; or a mixture of the nitric and muriatic.

*Nausea—vomitus.*—These are, in some instances, the most distressing results and signs of the dyspepsia. Sometimes nausea comes on soon after the food is swallowed. Sometimes there is no nausea; but after the lapse of a certain period, an hour or two generally, the food is rejected by vomiting. The matters thus thrown up are most frequently sour. Not seldom they are mixed also with bile, especially if the retching has been violent, or long continued; and then the patient is apt to ascribe the whole of his complaint to "an overflow of bile,"

although in fact the secretions of the liver have nothing whatever to do with it; the appearance of bile in the fluids ejected from the stomach proceeding from an inverted action of the duodenum. The effort of vomiting, however induced, will, if often repeated, be attended with the expulsion of yellow bile. I have more than once referred you, for an illustration of this fact, to the phenomena of sea-sickness. The fallacy I now point out has been one cause of the notion that is prevalent among patients, and the public—and not unfrequently perhaps among practitioners—that dyspepsia very commonly depends upon a disordered state of the biliary organs.

The vomiting which occurs in dyspepsia is often connected with a morbid irritability of the stomach; and it is sometimes a very troublesome symptom to treat. The carbonic acid has certainly a marked effect in allaying it in many cases. We give it, as you know, in the effervescing saline draught, made with the carbonate of potash, or soda, and lemon-juice. Sometimes the mineral acids answer better. Sometimes, on the other hand, alkalies—the liquor potassæ, for example—or lime water, are more effectual. In these latter cases we may presume that there is a morbid acidity of the stomach. Small doses of opium are sometimes successful when other means fail. Opiates thrown into the rectum—opium plasters to the epigastrium—blisters to the same part: these are measures which you will sometimes have to try one after another. There are two special remedies which have been greatly extolled for their virtue in abating sickness: the hydrocyanic acid is one of them; creasote is the other. The hydrocyanic acid I have found exceedingly useful in obstinate cases. It may be given alone—or mixed with the effervescing draught—or combined with a few grains of the sesquicarbonate of soda. The creasote has disappointed me oftener than it has answered my hopes from it. Yet it has a decided influence in checking some forms of nausea; and it is the more likely to succeed, in proportion as the condition of the stomach is remote from inflammation.

But after all, the grand principle on which to treat chronic vomiting—not dependant upon disease in other parts, as the head, the kidney, or the uterus—is that laid down by Dr. William Hunter; of reducing the *quantity* of food to that amount, whatever it may be, which the stomach is able and willing to retain, and of making its *quality* as bland and nutritious as possible. The most satisfactory case which I have had to treat upon this principle occurred some years ago, in the person of one of my hospital patients. She was brought out of Kent by her father. She had been under the care of several medical men, one of whom had been a pupil



of the hospital, and recommended her as a proper patient for admission there. Her age was sixteen. She and her father both agreed in the same story; viz. that she constantly vomited her meals; the food generally coming up again immediately after it was swallowed, and never remaining longer in the stomach than ten minutes. The vomiting was described as being easy; and was neither preceded nor accompanied by nausea.

She had been ill for four years: ever since a severe attack of scarlet fever. At first she vomited her meals now and then—three or four times a week—but the vomiting gradually became more and more frequent; and at the time of her admission she had vomited after *every* meal, for three months in succession. She had grown considerably in the four years; and was tolerably plump; and looked healthy; and the catamenia had begun to appear, though scanty, in the same period: but they had been altogether suspended for a year.

It was clear that a good deal of her food must have remained: and, bearing William Hunter's case in mind, I directed that she should have a very small quantity of roast meat for dinner, and a coffee cup of milk occasionally during the day; and no other food. I prescribed also some pills, consisting of aloes and soap, to act moderately on the bowels. I expected to have been obliged still farther to limit her food: but she never vomited again, from that time. This distressful and protracted disorder, after long and fruitless treatment previously, yielded thus at once and easily to very simple means.

*Inflation—ructus.* Flatulence, and belching. The gas that produces these symptoms is sometimes extricated from undigested food detained in the stomach, and in a state of fermentation: sometimes secreted, apparently, by the stomach itself; for the flatulence comes on when the stomach is empty of food. It is apt to arise, in dyspeptic persons, if a meal happens to be delayed beyond the accustomed hour. Patients complain grievously of these symptoms, and accuse the "wind in their stomach" as being at once the essence and the cause of all their complaints. They ask for medicines to get rid of the wind; and its escape may indeed be promoted by warm aromatics, and carminatives, as they are called: the relief thus afforded to the distended stomach being so sudden and for the time so complete, that the sufferer ascribes to the medicine *vis carminis*, the power of a charm. One of the most effectual and popular of these carminatives is peppermint water. A due regulation of the periods for taking food will often suffice to obviate the flatulence that belongs to emptiness. That which follows eating may, in many cases, be prevented, by swallowing, immediately before

the meal, five or six grains of the extract of rhubarb, with or without a grain of cayenne pepper. If the ascending wind brings into the throat and mouth a portion of the solid contents of the stomach, the patient is said to *ruminate*. The regurgitated matters are often intensely acid; and then an alkali may remedy the flatulence; a tea spoonful of *sal volatile*, for example.

Indigestion is, in many instances, attended with scarcely any pain; while in others the pain is very tormenting. Cullen speaks of it under the terms *cardialgia*; and *gastrodynia*. Cardialgia is that less violent and more permanent uneasiness which in popular language is called *heart-burn*. Gastrodynia is that more severe, and usually more transient pain, which is commonly denominated *spasm* or *cramp* of the stomach.

Dr. Abercromby has some useful practical observations in respect to pain of the stomach. He speaks of it as occurring under four different forms; and I am able to bear witness to the reality of the distinctions that he has drawn. In the first place, some persons suffer pain, occasionally, when the stomach is empty, even when there is no flatulence; and they are comforted and relieved by taking food. It is reasonable to suppose that this kind of pain depends upon some degree of acrimony of the fluids of the stomach itself. It is often removed at once by alkalies, or absorbent medicines. A tea spoonful of the aromatic spirit of ammonia, or a table spoonful of the liquid magnesia, in a wine glass of camphor julep, will still the whole uneasiness sometimes in a moment, as if by magic.

A second form of pain in the stomach is when it occurs *immediately* after taking food, and continues during the whole process of digestion, or until vomiting ensues, which gives instant ease. In such cases we have reason to suspect the existence of chronic inflammation, or of some undue sensibility of the mucous membrane of the stomach. The suitable remedies are such as I spoke of in the last lecture. I might have mentioned a form of medicine which Dr. James Johnson has found especially serviceable against this morbid sensibility; I mean the nitrate of silver, in small doses.

In a third species of painful disorder of the stomach the pain does not begin till from two to four hours after a meal, but continues for several hours. This is a very common form of complaint. Dr. Abercromby is of opinion that the pain is seated in the duodenum, and connected with inflammatory action, or with morbid sensitiveness of the mucous lining of that bowel. He says it is frequently accompanied by pain and tenderness of the right hypochondrium; and that the liver is often blamed when it really is not in fault. This last remark I

well believe; but I am not so easily persuaded that the pain is duodenal. I believe it depends upon acidity in the primæ viæ. It has been ascertained, by several chemists, that the acid which is present in the gastric juice is the muriatic. Dr. Prout holds that the source of this muriatic acid is the common salt which exists in the blood, and that the decomposition of this salt is owing to the immediate agency of some modification of electricity; and he conceives that the principal digestive organs represent a kind of galvanic apparatus, of which the mucous membrane of the stomach and intestinal canal may be considered as the acid or positive pole, while the hepatic system is the alkaline or negative pole. However this may be, it is certain that the muriatic acid contained in the stomach is often in excess: other acids are also found there—the acetic, and more especially the lactic; and when the food, now converted into chyme, passes into the duodenum, the remaining superfluous acid teases the stomach. I think this explanation of the cause of the pain is a more probable one than Dr. Abercromby's, because you may generally mitigate or remove the pain by introducing an alkali into the stomach, whereby the acid is neutralized: even the swallowing a cup of warm tea, by which the acid is diluted or washed away, often stops the pain. And I have, in numerous instances, succeeded in *preventing* the recurrence of this pain by directing the patient to take a small quantity of alkali, in some aromatic water, immediately after his dinner. According to Dr. Abercromby's theory the pain ought not to be so immediately allayed by these remedies; and, since the food is gradually propelled into the duodenum as it is digested, the pain should begin, I think (supposing him right), earlier than it does. Dr. Abercromby has found nothing of more general utility in these cases than the sulphate of iron, combined with one grain of aloes, and five grains of aromatic powder, taken three times a day. He praises lime-water also, and small opiates, and a combination of bismuth and rhubarb. What its *modus operandi* is I know not, but I am sure that bismuth is a very effectual remedy for some kinds of gastric distress.

Pain in the stomach occurs in a fourth form, coming on at uncertain intervals in most violent paroxysms, and properly called *gastrodynia*. It is often accompanied by a sensation of distension, much anxiety, and extreme restlessness. In females it is frequently combined with hysterical symptoms. This form Dr. Abercromby supposes to depend upon over distension of the stomach; and it may be so: certainly great quantities of air are sometimes extricated; and the pain is not confined to the stomach, but

shoots through to the back and between the shoulders. I suspect that the pain is sometimes neuralgic. It is often very intractable: occasionally it yields to carminatives. Dr. Abercromby states that he has observed the most effectual relief in such cases to have been obtained from exciting a brisk action of the bowels by means of a strong purgative enema. He makes this practical remark, which is worth attending to. From the facility with which such affections often yield to the remedy first mentioned, it appears not improbable that the pain may be sometimes situated in the arch of the colon. Wherever it may be situated, I know that it is frequently removed by a mustard poultice laid upon the epigastrium. Opium also is of eminent use in many of these cases; and cordials: but I have seen more rapid and decided relief afforded by the prussic acid than by any thing else; and the cure so wrought is often permanent. It does not bring ease in all cases, nor is it a medicine that is any particular favourite of mine, yet its good effect is in some instances so striking, that if this were its only virtue I should esteem the hydrocyanic acid a most valuable remedy.

You will meet sometimes with what is called *spasm* of the stomach (and I suppose it is such) in gouty people; who are then said to have gout in the stomach. The pain comes on in sudden and severe paroxysms; and is removable in general by laudanum and stimulants, brandy, for example; or by the mustard poultice. On these cases, however, we look with jealousy and apprehension. In some instances the attack is really inflammatory, and would then be aggravated by a stimulant treatment.

There is yet another modification of uneasiness and disorder of the stomach, of which the distinguishing characteristic is the vomiting, or rather the eructation of a thin watery liquid, sometimes sourish, but usually insipid and tasteless, and often described by the patients themselves as being cold. This is what Cullen calls *pyrosis*, the *water-brash*. It is a disorder much more frequent in the lower ranks of society than in others. It is particularly common in Scotland, and is there ascribed to the large employment of farinaceous substances as food, and especially of oatmeal. But it is said to be still more common in Lapland. Dr. Cullen, who saw a great deal of it, says that its paroxysms “usually come on in the morning and forenoon, when the stomach is empty. The first symptom of it is a pain at the pit of the stomach, with a sense of constriction, as if the stomach was drawn towards the back. The pain is increased by raising the body into an erect posture, and therefore the body is bended forward. The pain is often very severe; and after continuing for some time, it brings on an eructation of a thin

watery fluid in considerable quantity." Such is Cullen's description of pyrosis. He states that the complaint often occurs without other symptoms of dyspepsia; but this is not consistent with the experience of subsequent observers. It is a symptom sometimes of organic disease of the stomach. In one remarkable case of pyrosis which I saw, and in which not less than three pints of this thin tasteless liquid was brought up every day, the stomach, after death, was found to all appearance healthy; but it had been pressed upon by an enormous liver. I mention these facts that you may not suppose pyrosis to be always, as Cullen has described it, a substantive and idiopathic malady.

When pyrosis is not caused by organic disease in the stomach or in the liver, it will yield in general to opium, and especially to opium in combination with astringents. The *pulvis kino compositus* of the pharmacopœia is an admirable remedy for it. But we often have to contend with this difficulty, that the bowels, in cases of pyrosis, are generally confined, and that the opium tends to aggravate this unnatural condition; so that it becomes necessary to administer some aperient daily while the kino and opium are given: castor oil, or confection of senna, or cathartic extract.

*Costiveness* is, in fact, a very frequent concomitant of dyspepsia, as Cullen's definition affirms (*plerumque cum alvo adstrictâ*). And this sluggish state of the bowels often aggravates if it does not produce the dyspepsia. At any rate the defective powers and uneasy sensations of the stomach are rectified, in many instances, by measures which promote the regular and healthy evacuation of the intestines. Without professing to go into detail in this matter, I may state that, in our remedial attempts, we should imitate, as much as we can, the processes of nature. The mixed contents of the small intestines furnish the natural stimulus of their peristaltic movements; and the excrement excites the larger bowels. When this natural stimulus is insufficient, the want may be supplied by some substance which is involved in the food, and accompanies it in its progress—as the bran of brown bread, already mentioned, or a few grains of rhubarb or of aloes swallowed immediately before dinner. In adjusting the proper quantity of the drug the patient must assist the physician. It should be just so much as suffices to effect what nature neglects to do, and no more. With some persons an aperient pill acts more comfortably and opportunely if taken at bed time. Sometimes diarrhoea is associated with indigestion. This is usually connected with an excess of acid in the *primæ viæ*. The principle of treatment in such cases is obvious.

There are innumerable sympathies of distant parts with a dyspeptic stomach, in respect to which I can do little more than barely enumerate a few. Thus indigestion is often accompanied by pain in the head, with some confusion of thought; or at all events, with a loss of mental energy and alertness. Together with the violent headache there is frequently nausea and vomiting; and the complaint is popularly known by the name of the *sick headache*; or, in the fashionable jargon of the day, as a *bilious headache*. I must refer you to a paper of Dr. Fothergill's in the 6th volume of the *Medical Observations and Inquiries* for a very good account of this troublesome complication.

I shall hereafter have a good deal to say respecting certain morbid conditions of the urine, which take their rise sometimes from faulty digestion in the stomach, sometimes from faulty assimilation of the digested aliment in the more advanced stages of the process of nutrition. These conditions of the urine, indicating grave derangements of the whole system, furnish the characters and the names of several distinct maladies.

I told you, in a former lecture, that certain affections of the viscera of the thorax are liable to be produced by mere indigestion. Palpitations of the heart, irregularities of the pulse, fits of asthma, are no uncommon accompaniments of a disordered stomach. This is partly to be ascribed to that reflex sympathy between the parts concerned, which I have so frequently mentioned; partly to the effect of flatulence, which, by resisting the descent of the diaphragm, impedes the free working of the lungs and of the heart. I told you, at the same time, that these symptoms torment many persons with the belief that they spring from organic disease. This notion is particularly apt to infect the minds of medical students. I suppose most teachers in our profession partake of that sort of experience which Dr. James Gregory, of Edinburgh, used to speak of in his lectures. He said that scarcely a winter passed over in which several of his pupils did not apply to him on account of palpitations, supposed by them to depend upon structural disease of the heart: and in no single instance were their apprehensions well founded. They were all cases of mere dyspepsia and hypochondriasis.

Dyspepsia is often connected with phthisis, with leucorrhœa, with amenorrhœa and chlorosis: and some persons imagine that these diseases are *caused* by the dyspepsia. Indigestion may lead indirectly to the development of consumption, by producing debility; but the truer view of the matter seems to be that the dyspepsia is a consequence, rather than an exciting cause, of these complaints. When,

for instance, leucorrhœa is cured by topical astringents, as it often may be, the indigestion is often cured too.

One of the worst occasional concomitants of dyspepsia is that peculiar state of the mind to which I just now alluded under the term *hypochondriasis*. This is, in truth, a species of insanity: but it is so often connected with disorder of the digestive organs, that Cullen, whose descriptions of disease are admirably clear and true, however faulty many of his theories may be, defines hypochondriasis to be "*Dyspepsia—cum languore, mæstitiâ, et metu, ex causis non æquis.*" In the following short paragraph he completes the picture. "In certain persons there is a state of mind distinguished by the concurrence of the following circumstances. A languor, listlessness, or want of resolution and activity with respect to all undertakings: a disposition to seriousness, sadness, and timidity: as to all future events, an apprehension of the worst or most unhappy state of them: and therefore, often upon slight grounds, an apprehension of great evil. Such persons are particularly attentive to the state of their own health, to every the smallest change of feeling in their bodies: and from any unusual feeling perhaps of the slightest kind, they apprehend great danger, and even death itself. In respect to all these feelings and apprehensions, there is commonly the most obstinate belief and persuasion."

Now when the attention of the hypochondriac is thus morbidly fixed upon the states and the sensations of his digestive organs (as it is very apt to be) the patient becomes a plague to his physicians as well as to himself.

There are a few simple rules which ought always to be kept in mind in our *treatment* of dyspepsia; although we can seldom enforce them, as they ought to be enforced, upon our patients. What patients want, in general, is some medicine that will relieve them from their discomfort and uneasy feelings, and allow them, at the same time, to go on in the indulgence of those habits which have generated the discomfort. And such remedies have not yet been discovered.

One great and indispensable principle in the treatment of indigestion, is that of restricting the *quantity* of food taken at any one time. The gastric juice is probably secreted in a tolerably uniform quantity. The muscular contractions of the stomach must needs be impaired or impeded by much distension of that organ. For both these reasons the quantity of food introduced into the stomach should be kept within the limits of its capacity and powers. The great good which the late Mr. Abernethy unquestionably did to a host of dyspeptic patients, was owing much more, I am persuaded, to the rules of

diet, and the restrictions as to quantity, which he laid down, than to his eternal blue pill.

Again, as Dr. Abercromby has well remarked, and as Dr. Beaumont actually saw, various articles of food are soluble in the stomach with various degrees of readiness. Therefore, when the digestion is liable to be easily impaired, it is of great importance, not only to refrain from those substances which are known to be soluble with difficulty, but also to avoid mixing together in the stomach different substances which are of different degrees of solubility. Hence there are two reasons why it is salutary to dine off one dish. 1st, Because we avoid the injurious admixture just adverted to; and 2dly, because we escape that appetite and desire to eat too large a *quantity*, which is provoked by new and various flavours.

And another very important principle, greatly insisted on by Mr. Abernethy, is, that the stomach should have *time* to perform one task before another is imposed upon it. He always made his patients (at least he always strongly exhorted them) to interpose not less than six hours between one meal and another. Allowing from three to five hours for the digestion of a meal, and one hour over for the stomach to rest in, Mr. Abernethy's rule seems as much founded in reason as it is justified by experience. But we preach in vain on these topics. Mr. Abernethy was in the habit of saying that no person could be persuaded to pay due attention to his digestive organs, till death, or the dread of death, was staring him in the face. I have now in my mind a family consisting of a mother and three grown-up daughters, who are continually ailing and valetudinary. They profess to have great respect for my professional advice: yet I never can induce them to think that their plan of eating is a bad one. They are not early risers. They get to breakfast about half after ten, or eleven. At two they think it absolutely necessary to eat luncheon, which consists of a mutton chop, or some hashed meat, with vegetables. At six they dine: and at eight they drink tea: and then they eat no more till the next breakfast. And this is just a picture of the habits of scores of families. They huddle all their food into the stomach, at four periods, within seven or eight hours; and leave it idle for sixteen or seventeen.

Dyspeptic patients are very importunate to know *what* they may eat, and (more so still) *what* they may drink. It is of course impossible to lay down any general rules which will suit every case. The stomach has its idiosyncrasies. I remember seeing a publication, some years ago, one section of which had this startling title, "*Cases of Poisoning by a Mutton Chop.*" Dr. Prout knew a person who could not eat mutton in



any form. He was thought to be whimsical, and mutton was frequently served up to him under some other guise, without his knowing it: but it invariably caused violent vomiting and diarrhoea. Yet, for the average of stomachs, mutton is probably the most digestible of all meats. And for the average of stomachs some useful general directions may doubtless be given.

In fevers and inflammatory disorders, experience has taught us to forbid or restrict the use of flesh meat on account of its stimulating qualities. And when the stomach itself is affected with chronic inflammation, or with morbid sensibility, a diet restricted to farinaceous substances, and milk, is sometimes attended with the happiest consequences. I suspect that a false analogy has led some into the mistake of supposing that animal food ought to be refrained from, or taken in a limited proportion, in merely dyspeptic complaints. Animal food is easier of digestion, in the human stomach, than vegetable food. It is nearer, in its composition, to the textures into which it is to be incorporated by assimilation. There is less of "conversion" requisite. Indeed we may look upon the appropriation of vegetable matter, by granivorous and graminivorous animals, as one stage of the process by which such vegetable matter is prepared for the sustentation of carnivorous animals: even as one great end of vegetable life seems to be that of generating or concocting matter for the nutrition of the former class, out of inorganic materials, not fitted for that purpose: A more elaborate digesting apparatus is provided for the vegetable eaters. Man, indeed, is omnivorous. But his organs of digestion are more like those of the carnivorous than of the granivorous races. And it is notorious that vegetable food, when the stomach is weak, is followed by more flatulence, that is, is digested with more tardiness and difficulty, than animal food. Nevertheless, a mixture of the two, of well-roasted or boiled flesh or fowl, with a moderate portion of thoroughly cooked vegetables, is better suited, in my opinion, for a feeble stomach, than a rigid adhesion to either kind of aliment singly. Each of the four great classes of alimentary principles specified by Dr. Prout should be represented; the aqueous, the saccharine, the albuminous, and the oleaginous. All meats that have been hardened by culinary art, or by condiments, should be avoided by him, who, as the vulgar express it, has "a bad digester;" all cured meats I mean—ham, tongue, sausages, and so forth. Mutton is thought to be more readily digestible than beef. Pork, its lean part at least, is much less so than either. All raw vegetables also must be eschewed; salads, cucumbers, pickles. But if we press our prohibitions much more strictly than this, we incur the

risk of fixing the patient's attention too curiously upon his diet, and upon the sensations of his stomach; and of rendering him hypochondriacally alive to the miserable subject of his feeding.

Again, you will be continually asked whether you recommend malt liquor or wine, wine or brandy and water, white wine or port, sherry or madeira. Now it would be very easy to propound some positive rules in this matter, but it would not be so easy to vindicate them. Some allowance must be made, no doubt, for custom. I believe, however, that most dyspeptic persons would be better without any of these drinks. But it is very difficult to persuade them that the habitual use of strong liquors in small quantities can have any injurious effects. "It is not easy (says Cullen) to engage men to break in upon established habits, or to renounce the pursuits of pleasure; and particularly to persuade men that those practices are truly hurtful, which they have often practised with seeming impunity." They are too ready to believe that it is unsafe to abandon their accustomed indulgence. A friend of mine, who visited, some years since, many of the American prisons, tells me that the health of even the most inveterate spirit-drinkers improves, instead of suffering, upon the sudden and total abstinence from spirits, which the regulations of those prisons enforce. There certainly are cases in which the digestion seems to be helped by a moderate quantity of wine, or beer, or spirits; yet no one can say before hand—at least I cannot—which of them is to be preferred. Upon these points patients should interrogate their own sensations and experience, instead of seeking the oracular counsel of a physician. Drinks which are followed by evident disturbance and discomfort are manifestly unfit. And even when a favourable effect, for the time, appears to be produced, there is always a risk of ultimate detriment to the powers of the stomach from this habitual excitement.

There are states of mind, and habits of life, which, having no direct relation to the organs of digestion, yet exercise a material influence over their functions. Mental distress; mental solicitude; mental toil; over much study; want of exercise: these are all prolific sources of dyspepsia. Sedentary habits, when their injurious effects are known, may be altered: excessive intellectual labour may be abandoned: but it is seldom that we can minister to a wounded or an anxious spirit. Our task is hardest of all when the patient's anxiety relates to his own complaints; when he is morbidly engrossed by his bodily feelings, and despondent about his recovery. The management of the mind of a hypochondriac is peculiarly nice and difficult. It will not do to treat him as if his ailments

were imaginary. He disbelieves you, contemns your judgment, and deserts you: to be fleeced perhaps by some villainous quack. You must hear what he has to say; shew an interest in his case; and prescribe for him: assuring him that you understand his malady, that it is curable, and that he will be cured provided he follows your directions. If you can succeed in gaining his confidence, and in persuading him of this, the battle is half won. To tell such a person, however, not to think of his grievances would be worse than useless. The very effort to drive a subject from our thoughts fixes it there the more surely. But you must endeavour to turn his attention to other things; and to awaken in him some new interest. Prescribe *change*: change of air; change of place and of scenery; change of society. Get him to *travel* in search of health; and the chances are in favour of his finding it. A tour, in fine weather, and through a pleasant country, combines almost all the ingredients which are, separately even, desirable: the withdrawal of the mind from its ordinary pursuits and cares; the diversion of the attention from one's self, by new and varied objects; exercise, carried on in the open air; a holiday from intellectual toil. Six weeks among the mountains of Switzerland, or upon the rivers of Germany, will often do more towards restoring a dyspeptic hypochondriac than a twelvemonth's regimen and physicking at home.

With these disjointed hints, gentlemen, I must request you to be satisfied in respect to the principles upon which dyspepsia—and the hypochondriasis, which is in general so closely linked with dyspepsia—are to be managed. A full discussion of these subjects in detail would furnish matter for several lectures.

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## ON ARTIFICIAL CLIMATES,

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH: TO BE CONSIDERED UNDER  
TWO HEADS.

I. *The atmospheric treatment of the lungs.*

II. *The atmospheric treatment of the lungs and skin.*

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 974.\*]

*The atmospheric treatment of chronic  
diseases of the chest.*

OMITTING, with a view to brevity, an examination of the various agents which

give that influence to the air which constitutes a climate, I shall confine myself to the action of the constituents which are most important in the treatment of chronic affections of the chest, and at the same time under the control of art. These are, first, air, in which term I would comprehend the three gases—nitrogen, oxygen, and carbonic acid, in their natural proportions of about 79 of the first, 21 of the second, and one-tenth part of the last. The steadiness with which this proportion is maintained may assure us that it is that best suited for health, and we have no evidence that any other would be better for the lungs in a diseased state. Neither would it be easy to maintain for any length of time a different proportion of these elements. They may, then, for our present purpose, be treated as one. Secondly, of the imponderables which are constituents in the atmosphere, namely, heat, light, and electricity, in this place we have to deal with the first only. Thirdly, of the various terrestrial impregnations which are much concerned in giving a character to climate, we are chiefly interested in commanding the presence of a due quantity of the vapour of water, and in the exclusion of most of the others.

Air, (meaning thereby the three gases), heat, and vapour, are then the materials, by varying the proportions of which we may hope to form artificial atmospheres suited to chronic diseases of the chest.

Limiting my present remarks to the influence of what may be termed the three staple constituents of an artificial atmosphere for the lungs, namely, air (that is, the natural gaseous mixture), warmth, and moisture, it will be convenient to premise a few remarks upon the more important varieties of atmosphere, which are produced by combinations of these elements in different proportions.

We may assume a bland or balmy air to be just such a mixture as shall produce no excitement, whether pleasant or painful, but is soothing to the animal frame throughout. This may be called an atmosphere *à par*; and if the same proportions of the constituents produced in all persons the same feeling, we might ascertain to a certainty what constituted a perfect atmosphere. As it is, we must rest satisfied with the know-

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\* In the last paper, p. 970 of the GAZETTE, the active, "overlying," was misprinted for the neuter participle, "overlying."



ledge that there is some average proportion which forms an air of the character which may be termed balmy to the generality of mankind. This, then, we may call an air at par; and although the qualities of the infinitely various mixtures run into each other, so that no line of demarcation could be drawn, we may discern six sorts of air, the characters of which are strongly marked, according as the elements vary either way, from the balmy state or that at par.

We have then to deal with, first, air having both its heat and moisture below par; that is, cold and dry air. Secondly, air having its heat below and its moisture at par; and this we call simply cold air. Thirdly, air with the heat below, and the moisture above; or cold and damp air. Fourthly, air with its heat above, and moisture below; or hot and dry air. Fifthly, with the heat above, and the moisture at par; this we recognize as simply warm air. Sixthly, with both these elements above par; or warm and moist air. This may appear giving needless formality to familiar conditions of the air; but it is not so. To the want of some classification we may trace many vague notions and actions prevalent in society with reference to atmospheric influences upon the health.

With respect to the *actual quantity* of the elements present, every one who has attended to the branch of physics which comprises this question, will bear in mind that the same absolute quantity of moisture may exist in a very damp and a very dry air; in which case the former air must be cold, and the latter hot. It is the *relative* quantities with which we are concerned, as those which exercise an influence upon the human frame. I have sometimes ascended from a deep valley in the Himalayas, where the atmosphere was hot, and manifested by the hygrometer considerable dryness. In a rapid ascent the change produced in the character of the same air, by a change only of the thermometric condition, was striking to the feelings. It by degrees acquired, at a certain height, a balmy feeling which was delightful. At a greater height it became bracing; then raw; and at a greater height still damp and chilly, and peculiarly unpleasant to respire. That it was air of the same proportional composition as that in the valley I could

not doubt, from the fact that a breeze of fresh air blew up the mountain-side during the whole ascent. When the ascent has been great, and nearly continuous, these changes have been very marked and steady; and they must have been noticed by every traveller, in such regions in the tropics, who has had in his view the hygrometric condition of the air. These are instances in which, with the same absolute quantity of vapour, every variety of climate is produced by a change only of temperature. As in such cases the change of temperature is due to the expansion of the air, as it rises and is under less atmospheric pressure, the absolute quantity of heat, as well as of vapour, may be the same in an equal weight of the air as in the valley. We may here perceive a curious and important indirect effect of different degrees of atmospheric pressure, besides its direct action on our bodily frame.

On the other hand, considerable, though less varieties, may be produced by different quantities of the *vapour* present; while the absolute *heat* remains the same.

It would be exceeding the limits of my province to enter farther into these natural modifications of the air, and although it was necessary to enumerate the various kinds of air, the characters and action of which we have to recognize, since the physician is familiar with their effects I shall not presume to occupy medical readers with a consideration of them at length; but I may briefly notice each, with the view of establishing the positions which follow.

1. Cold and dry air, though bracing to the healthy, and to some other invalids, may, I presume, be pronounced more or less injurious in the cases of the great majority of pulmonary invalids. Even in such exceptions as those of active hæmorrhage from lungs, is not the exposure, though necessary, often partially counterbalanced by its after-effects? If the air be extremely dry and cold, it is piercing even to the lungs of a healthy person, by the evaporation it excites, added to its conducting power; though its external effect on the skin is not equal in proportion. On the air-passages, in an irritated state, its effect is obvious, adding distress from exsiccation to that from chilling.

2. Cold air, but with its moisture at par, or in that state in which it excites no unusual evaporation, appears the most durably bracing and healthful to others, and even to some pulmonary invalids it is, at certain periods, grateful, when the excitability of the pulmonary membrane is moderate, while at other times, often in the same day, the same air is distressing, and manifestly injurious. This fact, the dependence of which may, in part, be traced on the quantity of animal heat being generated at the time, led me to contemplate an indirect benefit, namely, the recovery of animal heat, from measures the direct effect of which would be the protection of the lungs. Numerous opportunities have been afforded me of observing the realization of this indirect effect in a remarkable degree.

3. Cold and damp air appears beneficial to few, if any persons, either in health or otherwise. Though it may preserve an irritated pulmonary membrane from dryness, it acquires so much more conducting power, from its humidity, as to be doubly chilling. But it is proper here to remark, that we witness always its conjoint action on the lungs, and on the surface: for even with clothing it checks greatly cutaneous exhalations. Were the *skin* under a warm and dry air, we cannot doubt the injurious effect of the former on the lungs, though still obvious and serious, would be lessened.

4. A hot and dry air seems to agree well with many persons for a time, but to be ultimately exhausting to all. Confining myself to its action on the pulmonary membrane, experience, which has not been inconsiderable, has led me to the conclusion that it has no direct tendency to bring on disease in the chest, though I have known catarrh in the pituitary membrane of the nostrils to be caused by it; but when pulmonary irritation is present, it is much aggravated by a hot and dry air. Active pulmonary disease, in such weather in India, makes a rapid progress. In this country, I believe most pulmonics find a very dry air, though warm, injurious. To some, no air seems more so. The trying effects of such air may, I presume, be entirely laid to the charge of exsiccation. The lungs, when irritable, are rarely in a state to enjoy a quick removal of mois-

ture from their membrane. Even in cases of humid asthma, it may be questioned whether a *very* dry air would be suitable. I have seen some cases benefited much by air in an opposite state, and at the same time warm; while in other cases the respiration of a very humid air, though warm, has appeared to cause some oppression.

In air of the fifth kind, namely, warmer than is refreshing to the *healthy*, but of the same tone (or at par) as to moisture, we recognize the usual atmosphere provided in the chambers of pulmonary invalids, who are under judicious management. Since the skin here partakes of the action of the same atmosphere with the lungs, excepting in so far as it is modified by clothing, physicians, while desiring an artificial climate of this character, doubtless provide the best which can be commanded with domestic arrangements, as imperfect as those common in this country as well as in most parts of Europe.

As to the action upon the lungs of air thus simply warm, I cannot omit to notice a question with respect to it, arising as it did in authority meriting at all times much respect. Some years ago, it was argued that if cold air caused irritation in the lungs in some cases, warm air did in others; for that invalids often felt distress, not so much in the open air as after returning to a warm room. All practitioners must have met with such cases, for they are by no means uncommon; but so far from establishing the fact to which they apparently point, they prove the injury of cold air, quite as much, as does immediate distress from it.

Due reflection must surely satisfy us of this; for it will always be found that the distress alluded to arises *after* the exposure of the lungs to the cold, not before it. The air of the same room, which caused no distress before, is now charged with exciting the irritation and cough. May we not perceive, in cases of excitability of the pulmonary membrane, that which we often observe in outward cases, that cold air will in some cause irritation at once, and, in others, mask the irritation, by at first, in a measure, benumbing the surface?

On entering the warm room, this effect being removed, the irritation occasioned by the cold manifests itself in the reaction which takes place.

That cold is the cause we have proof in the fact, that if the lungs are provided with a warm atmosphere while the person is out, on returning home none of the former irritation is perceived. Indeed, so far from being exceptions to the beneficial action of warmth, to no cases is a tempered atmosphere more advantageous.

6. It was requisite to notice, very briefly, the other several varieties of air of marked character, that I might be brought to rest upon that one which I conceive of chief value in the treatment of pulmonary irritation; namely, an air to a greater or less extent warmer and moister than what I have termed air at par, or air of a temperament which is soft or balmy\*, to persons in sound health.

Here it will be right to meet an objection which has been more than once raised to the views I am now advocating—that whatever might be conceded to theory, it is found in practice that a moist atmosphere, though warm, does not in general suit the pulmonary invalid. It is admitted, indeed, that in febrile and irritable temperaments such an atmosphere is beneficial, but it is contended, and established by an appeal to facts, that persons of a languid and debilitated frame are injured by a residence in moist climates, suffering ultimately an aggravation of their pulmonary symptoms by it. Hence the air of most places in Cornwall, and even of the western isles, is not found suitable to many.

This is a very important consideration in the production of an artificial climate, suited to the *whole* body, where the *skin* is to be subjected to the same atmospheric treatment with the *lungs*; for the natural climate, from whence the analogy is taken, enveloping the whole body, acts of course at every point upon it. May we not, however, be prepared to find an atmosphere having this universal operation on the body to be oppressive, and debilitating, on account of a degree of humidity, not at all too much, if it acted only on the irritated part; nay even less than the choicest quantity, if accompanied by suitable warmth?

\* I take the liberty to employ this term in connexion with air, to denote the character and power of action on the body, conferred on it by the proportion of moisture, together with warmth present; the word *temperatures* having by use been confined to the effect on it of heat alone.

That this position is true of a large majority of chronic pulmonary affections of various kinds, overwhelming evidence has been afforded by the experience of late years. The exceptions indeed have been much fewer than might have been expected, owing to the opposite character, in some respects, of the affections benefited.

It would be of the greatest importance in the treatment of diseases, if we could always determine the extent to which outward agents are producing or aggravating the symptoms. To arrive at an exact knowledge of this is beyond our power; but do we adopt the best measures for keeping our minds prepared to seize all the evidence we can of such influence?

Since we find the various indications of disturbed health, named symptoms, prone from causes, some of which are obvious, and others occult, to occur in sets, it is undoubtedly necessary and correct to class these sets of symptoms under different names, and to treat each as a separate disease, with as much steadiness as we observe its character to maintain. The science of practical medicine must, indeed, rest on such a classification.

At the same time would not another classification of symptoms, under their causes, so far as they can be discovered, be also very advantageous; especially as to how far they are intrinsic, arising out of a tendency to disordered action in the system itself, or extrinsic, produced or aggravated by external agents? Though the influence of outward agents is by no means overlooked by the able cultivators of modern medicine, are not some too much disposed to treat their power as secondary, and, through scholastic habit, to acknowledge a certain set of symptoms as a kind of rightful property of a disease? By thus expecting the presence of a symptom, are we not rendered less watchful of external agency in producing or aggravating it? If I may state the experience of one individual mind, I am ready to admit myself to have been greatly under this bias of a system, and to have found an emancipation from it to have opened the prospect of a new field for useful labour. The influence over bodily symptoms of certain external agents acting through the mind, and the grosser influence of others acting through the stomach,

have doubtless received much attention; nor has atmospheric influence over pulmonary symptoms, to which our present subject confines us, by any means been neglected; but I think the power it exercises in the production and maintenance of symptoms is oftentimes far more considerable than is apparent at the time.

I now proceed, therefore, to attempt some inquiry into the power which the atmosphere exercises in the production or aggravation of some of the more general symptoms.

**Cough.** No one can overlook the fact that this symptom is much influenced by the state of the atmosphere, but it is still rather considered a symptom belonging to several affections of the lungs, than as mainly what may be termed an atmospheric symptom. On the one hand we find it to accompany in general all diseases of the lungs, so that it cannot rest upon any peculiarity in any one disease; and on the other hand, we observe each disease in its chronic stage occasionally to want this symptom, which also tends to the conclusion that it is dependent, in part at least, upon some external cause.

If we will allow our attention to be arrested by familiar facts, and will reason upon them, shall we not be led to the conclusion, that, while the disease is a remote cause of cough, by rendering the pulmonary membrane susceptible of irritation, the active cause, or irritant, is at all times, and in every case, to be found chiefly in the state of the air, acting either on the skin or on the lungs, especially upon the latter? To this fact in chronic disease there are very few exceptions. It often happens that some collected secretions appear to cause the cough, for when they are expectorated a temporary relief is felt; but we may almost invariably find the anxiety to expectorate them to be closely dependent on the state of the atmosphere, and indeed their secretion also. Do we not find them irritating in proportion as they grow thick by drying? It is common for a violent fit of coughing in the morning to bring up a solid crusty sputum, which had dried during the night under the constant action of the currents of respired air. In such a case, the sputum is rendered irritating entirely by the air. Collections will often remain a whole night in the chest, causing no distress, if the air respired

is rendered exactly suitable to the lungs, so as to soothe instead of irritate them:—a fact I have frequently noticed. In this case the expectoration is often effected with perfect ease in the morning, and its *collective* amount is always *much less* than if it had been forced up all the night, as fast as it was secreted, by repeated coughing. Now this state of distress may be produced at once by substituting an untempered for the balmy air. Even with the imperfect modification of the air which a bed-room fire produces, nothing is more common than to find the suffering of invalids to commence when the fire goes out in the night; shewing that the cause of the immediate distress is the state of the air. Yet even the best air, produced by ordinary means, is a very imperfect substitute for the proper atmospheric treatment.

In the first place, it is not warmth only which is wanted. In a large majority of cases the air ought to approach, by the addition of moisture, more near to a saturated state; and such air should be administered as uninterruptedly as the warmth. A temporary employment of it, even at the gentle warmth desirable, to be followed afterwards by air of ordinary dryness, may in effect and in principle be compared to a temporary supply of warm, to be followed by breathing cold air. We must look upon air of a warmth and humidity suited to the case, not as a measure of active treatment, the effects of which are to be expected after the employment ceases, but as simply a careful warding off of the grand irritant to lungs in an excitable state—an atmosphere of an unsuitable temperament. If we take this view of the point before us, it becomes obvious that the protection must be *unremitted*.

But in this case of nightly cough there is another reason why all the power of the air, for good or for evil, is not manifested, if by tempering the *whole* air of the room we think our atmospheric treatment completed, and conclude that in any subsequent distress atmospheric causes cannot be concerned. In this, our usual course, we involve the whole body in one atmosphere. If it be elevated to the point which would be perfectly soothing to the lungs (so far as warmth is concerned) it is too likely to cause oppression, restlessness, and fever. Hence, by experience, we





For the irritable lungs, until we had ascertained the fact that a more soothing air could not be commanded for them; and if we found that it could, it should surely be again our primary measure to administer it to them, our medicines being reserved for the removal of any distress that did not subside under its genial influence. Of course it is meant that all active treatment required for the disease, as well as all other regimen, should be employed according to the indications; but it is at the same time unquestionably proper to ascertain (if we can) the whole extent of the atmospheric influence on the symptoms, and remove, as we would a foreign body, any remaining cause of irritation in it, before we attempted to allay the cough by other means.

If even in cases where the air of a room is tempered by a fire, a still further modification of that supplied to the lungs is indicated, with how much force does the argument apply to the numerous cases in which either the fire goes out at an earlier hour, or in which no means at all are employed for tempering the air! How many persons overlook the fact that the state of the atmosphere is the chief cause of their suffering at the time, and often of the disease itself, by its repeated influence, and treat themselves as if their cough depended entirely upon some internal cause, to combat which the stomach was the proper chamber for the conflict! And how strangely do they neglect to consider that they cannot thus repeatedly employ it as the arena for altercations for which its delicate drapery was not intended, without, in time, seriously damaging its walls and floor, and with them every other chamber in the dwelling-house of life. Yet, without any consideration, two-edged weapons are often daily swallowed in some hidden specific, in preference to the employment of measures prescribed or devised by qualified minds!

Thus to employ specifics for subduing the irritability, before we have removed the chief exciting cause of it, may be compared to the act of a native surgeon of India, whom I found applying a plaister of opium and herbs to the foot of a person in great pain, in which there proved to be a very large thorn, causing the distress, the presence of which he had overlooked.

2. *Dyspnœa*.—Difficulty of breathing is another symptom which, next to

cough, appears in chronic affections closely dependent on the state of the air. With the exception of cases where it is the result of extensive disease in the lungs, we find it to vary so greatly with changes in the atmosphere, that we are justified in maintaining the expediency of endeavouring to moderate it by measures directed against irritating properties of the air. These being nearly the same as in the case of cough, the remarks under that head are applicable to dyspnœa. In addition to the immediate distress produced by oppressed respiration, we have to bear in mind, that, if long continued, it cannot fail of acting, indirectly, in a very pernicious manner. The lungs being never supplied with a due quantity of fresh air, an unhealthy condition of the blood is the necessary result. Since the gaseous discharges from the lungs must be limited in proportion, a quantity of matter must accumulate in the blood, which ought to be excreted; in short, a sort of pulmonary constipation is established, the effects of which will not appear trifling to those who bear in mind that the lungs are the grand channel for the discharge of surplus matter from the body, compared with which even the alvine discharge is small. This fact cannot be overlooked by the pathologist. It even struck myself, on my return from a tropical climate, where, amidst many causes of bodily distress, the respiration is in general very free. Here, in England, most pulmonary invalids seemed to be constraining their lungs to make shift with half the natural quantity of air.

3. *Pain*.—That the state of the air is largely concerned as a cause of this symptom is a familiar fact, though not to the extent to which it has a share in producing cough. Nothing is more common in chronic disorders than for pain to be rarely felt, excepting as a consequence of inhaling keen air. When much disease is present, the pathologist discerns a mechanical cause for pain during inspiration; but in the great majority of cases, the state of the air is obviously the chief cause of such pain as is felt during the indraught of air. That the cause is more atmospheric than mechanical, we may conclude from the fact, that the point, or degree of expansion, when the pain is felt, depends much upon the character of the air entering; for, as an apart-



are led to the conclusion that a certain temperature (commonly about  $60^{\circ}$ ) is the best for pulmonary affections: and as a night cough will often still prove distressing, especially in the recumbent posture in bed, we are wont to view it purely as a pulmonary symptom, in which the air cannot be concerned; for we have found, we think, by abundant trial, the best atmosphere for such cases, and even, perhaps, by watchful attention, for the particular case. If it be then purely a symptom of the disease, we conclude that it must be treated medicinally; and resting satisfied with our atmospheric management, our whole attention is wont to be directed to treatment of another kind. The diseases and states of the system in which cough is a troublesome symptom, are so various, and even in the same disease the shades of difference so numerous, that the sagacious and learned physician finds in the discerning of them an inviting field for the exercise of his skill; and it is exercised by such men in a manner worthy of all our admiration. Even a domestic medicine chest will be made to yield perfect relief in such hands, which, when meddled with by the owner, had only served to increase the symptoms, and, perhaps, to aggravate seriously the complaint.

But while it behoves us to appreciate to the fullest professional skill exercised in a proper employment of medicinal and other remedies, the position is not at all altered, that until we have submitted the lungs to a different atmospheric treatment from the skin, we cannot have ascertained the extent to which the air may have been the cause of the cough on the one hand, neither can we know on the other the amount of relief which may be at our command, if we can administer to the organ an atmosphere designed for it alone, so as not to be arrested in our progress towards its attainment by the oppression it would occasion if the whole system were subjected to its action. The case is nearly the same as if we had never been able to arrive at the employment of fomentations to irritated parts, because experience had established the fact, that placing the whole body in a hot bath was injurious in such cases by exciting fever.

It will not surely be argued, if the cough can be relieved by internal

medicines or by counter-irritants, that we may be satisfied with an atmosphere as near to that desirable for the lungs as one that envelops the whole body admits of being made; for though the injurious effect of medicine is often far less than the continuance of distress, so that the benefit, upon the whole, is great, we must not overlook the fact that, viewed apart from their object, medicines repeatedly taken are injurious; and as they decline in their effect by use, in many chronic cases, with a constantly decreasing effect, we have an accumulating injury from them, until disorder of the stomach is superadded to and aggravating that of the lungs. That was surely good advice to a friend, to take every grain of medicine that was necessary, but not one grain more.

If the fact should be granted that in *many* cases (I will not say *all*), after the usual precautions for tempering the air of a room have been adopted, atmospheric influence has still a share in producing the cough, before medicine is given to relieve this symptom, ought not our efforts to be directed towards the removal of the remainder of such atmospheric influence? Ought we not, upon principles strictly medical, to consider the first indication to be the employment of all the resources of science and art for rendering the air administered to the lungs as soothing as possible to them, and then to employ drugs to perform whatever supplementary work remained to complete the relief? The question is one only of degree. The case forms part of a system, at one end of which would be treating a pulmonic patient in a barn; where, in spite of the weather, it would, no doubt, in many cases be possible to effect a cure by the power of medicine, but the treatment would have to be doubly trying. Here the causes aggravating the symptoms would be obviously atmospheric, but they would not amount to the whole influence of the climate, for the patient would have to lie out of doors to be subjected to it; they would only be the remaining influence which the shelter of the barn could not modify. Since we would not rest satisfied with the atmosphere of a barn as sufficiently artificial, but as a primary measure would bring the sufferer into a bed-room, so neither should we stop here, and rest contented with this atmosphere as sufficiently artificial

for the irritable lungs, until we had ascertained the fact that a more soothing air could not be commanded for them; and if we found that it could, it should surely be again our primary measure to administer it to them, our medicines being reserved for the removal of any distress that did not subside under its genial influence. Of course it is meant that all active treatment required for the disease, as well as all other regimen, should be employed according to the indications; but it is at the same time unquestionably proper to ascertain (if we can) the whole extent of the atmospheric influence on the symptoms, and remove, as we would a foreign body, any remaining cause of irritation in it, before we attempted to allay the cough by other means.

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ment grows warmer, an invalid will often breathe more and more deeply without pain. While this is a matter of common observation, it will not do to conclude that the air is rendered sufficiently suitable when all pain ceases, for upon trial we shall frequently find that the cough, which is commonly still present, may be also removed by an atmosphere of a much more refined temperament (if I may be allowed the expression) than will suffice for causing pain to cease.

The fact is not overlooked, that an in-draught of sharp air will sometimes cause pain, without exciting any cough; yet I presume it is correct as a general truth, that where pain arises from the state of the air, a more ungenial air is required for producing it, than would excite cough; and the reason is obvious. Air, if removed in the smallest degree from that balmy state which would produce no sensation in the excitable membrane, may cause the uneasy tickling which induces coughing, but it must be of much rougher quality in order to irritate the membrane to the point exciting pain.

3. *Expectorations.*—While every affection of the lungs has a discharge more or less characteristic of it, and while it is admitted that this is not so much an atmospheric symptom as cough, even a casual observer may soon perceive the fact that the state of the air has a large share in determining both the quantity and the quality of the discharges in every case. Some invalids may almost tell which way the wind blows, whether from a damp or dry quarter, by the state of their rheum. Since the character of the discharges has so close a connexion with the progress of the disease, we have in this symptom also a ground for anxiety, that so long as their undue excitability continued, the lungs should never be visited by any but a genial air. Now there is no fact which it is of more importance to dwell upon, or which is more irrefragably true (however little attention it may have commanded), than that, in most chronic affections of the lungs, an atmosphere, if it be well suited to the exterior surface, will not prove of that temperament (*i. e.* thermometric and *hygrometric* condition), which is qualified to exercise the most genial influence possible upon the pulmonary membrane while in an irritable state.

REMARKS  
ON  
CERTAIN DISEASES OF THE EYE,  
ILLUSTRATED BY CASES.

BY JOHN CHARLES HALL, M.D.  
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London, &c. &c. &c.  
(For the Medical Gazette.)

III.—*Iritis continued; use of iodine and salicine in certain forms of it.*

IN the last paper we examined the anatomy of the iris, and the causes, symptoms, and effects of acute iritis. Although I have insisted on the necessity of bleeding in the early stages of it, the student must remember that bleeding alone will not cure the disease, and if he relies solely on an antiphlogistic plan of treatment, will have to regret the loss of vision in many of the cases he may be called upon to attend. The sheet-anchor of the surgeon is calomel; and this must be given until the system is thoroughly affected. But can we always employ this remedy? No; constitutional systems often point out the impropriety of using it at first: the state of the patient must be carefully attended to, the general health improved, and mercury afterwards given. I am, of course, now speaking of the chronic rather than the acute forms of the disease. When we cannot, in acute iritis, for reasons already stated, give calomel internally, the blue ointment, combined with opium, must be rubbed in every night and morning, and the following medicine given regularly, as directed:—

R. Potass. Iodidi, gr. ij. ad grs. iv.;  
Syr. Aurantii, ʒi.; Aquæ Rosæ, ʒix.  
M. ft. haustus ter die sumendus.

This is a very valuable remedy, and, next to mercury, the best we can employ. In every case I am called upon to attend, I give small doses of the above, in addition to the calomel and opium, and with the greatest possible success.

The cases I have seen (and they certainly amount to several hundreds) of acute iritis, not only in private practice but also in the hospitals of London and Paris, warrant me in thus strongly urging the employment of mercury in the treatment of this disease. If used properly, and the disease taken in time, I am fully persuaded, nay, even cer-

tain, that in by far the greater number of cases useful vision may be preserved; and therefore the mercurial plan being certain, ought always to be used. The antiphlogistic plan is uncertain, and ought never to be altogether depended upon. Bleeding largely, and then rapidly affecting the system with mercury, is a plan of treatment that holds out every prospect of success in favourable cases—I mean cases in which we see the disease in its first stage; and even when some progress has been made, very useful vision is frequently obtained by steadily going on in the use of calomel and opium, and the preparation of iodine already mentioned.

Strongly as the use of mercury has been insisted upon, some caution is, nevertheless, required, and the case must be carefully watched, if the desired end is to be accomplished. If the disease advances, the dose must be increased; if checked, and the system has become affected, it must be diminished. The abuse of good remedial agents has brought them into disuse, and the advocates of them come in for no small share of censure, through the ignorance of those who misemploy them. In certain injuries, bleeding is doubtless useful, to prevent, or if present to subdue, inflammatory action; but, if carried too far, the powers of nature may be exhausted, and the curative process altogether prevented. So, in the exhibition of mercury for the cure of iritis, it often fails to afford relief, because carried too far, and thus begets, or, at any rate, supports, a peculiar state of the system, under which it is quite impossible a healthy local action can exist. It will, therefore, be necessary to examine the condition of all the important organs of the body, and the way in which they perform their several functions, before commencing a course of mercury; and the form of its exhibition, and the strength of the dose, must be regulated accordingly. Here I feel my inability to give plain directions to the student; the necessary information cannot be given in the pages of the *MEDICAL GAZETTE*. The disease must be studied at the bedside of the patient, in the wards of our hospitals; the volume of nature must be read; its pages are open to the humblest inquirer, and amply will his researches be repaid. Could the candidate for the diploma of the College of

Surgeons, and the College of Physicians, be examined, partly in the wards of an hospital, and made to point out the nature of the disease, its cause, symptoms, probable result, and the treatment necessary, the trade of the grinder would soon cease, his wheel emit none of its brilliant sparks, and in the place of men crammed for the occasion, we should have practitioners who would be alike ornaments to the profession and useful to the public. Much as I have written for the *MEDICAL GAZETTE*, I have never mentioned medical reform, being satisfied with things as they exist at present; at the same time, I venture to throw out this hint, and were it adopted, think much good would result from it. We have next to consider

## II.—*Chronic Iritis.*

In speaking of chronic iritis, I do not allude to that disease which is sometimes found after the more severe symptoms of iritis have passed away. In addition to this, a form of the complaint is now and then present, which, from the slowness of its growth, the mildness of its symptoms, and the length of time it continues, must be termed chronic iritis. It will be well to distinguish between the two forms of this malady; all the train of symptoms already pointed out are much less acute, and far more slow in their development. In acute iritis the disease may be fully established in twelve or twenty-four hours. In this form of it as many hours may have passed away, and no progress made. The red zone of vessels is far less marked, and appears broken in many places (*an interrupted belt*); and although the symptoms described as pointing out an attack of acute iritis are present, they are far less marked, and the power of vision is less impaired; but, if suffered to run its course, by degrees the organ will become imperfect; and so slowly, so insidiously, does the disease creep on, that the eye may be all but lost before the patient has discovered it. In many cases the other eye, at this stage of the attack, becomes dim, and then the patient applies to his medical attendant, and the mischief is discovered. Little pain then is experienced; there is little or no intolerance of light, and no increase of lachrymation, or, if it exists at all, it is too slight to arrest attention.



It will be necessary further to remark, that in chronic inflammation of the iris (not the result of the subsidence of an attack of acute inflammation), no change takes place in the colour of this membrane. I have seen lymph deposited, the pupil closed, and vision destroyed, from long-continued and repeated attacks of inflammation of the iris, without its having lost either its colour or peculiar polish.

It not unfrequently happens that some patients are repeatedly affected with slight attacks of iritis, which, in the end, either altogether destroy vision, or seriously injure it, by rendering the transparent structure of the eye opaque and muddy. In these cases it is absolutely necessary at once to subdue the attack of inflammation; secondly, to ascertain, and if possible to remove, the constitutional derangement on which it depends, and to prevent the patient using the eye in any way that may tend to injure vision; and, lastly, by establishing some permanent counter-irritation, as a blister behind the neck, or a seton, to preserve the eye from additional attacks of inflammation. It will also be necessary to pay particular attention to prophylactic measures, for when once this form of inflammation has set in, it is very liable to return again. It is a singular fact, nevertheless one that is well authenticated, that this disease runs in families. Mr. Middlemore remarks,—“I am acquainted with several families, the brothers and sisters of which are blind from relapses of chronic iritis: three brothers and two sisters in one family have lost all useful vision from relapses of this disease, and the eldest of them is not more than 50 years old.”

This disease must be looked upon as a less acute form of iritis (of simple acute iritis), but, as already seen, frequently leads to loss of vision. I have at this moment the son of a farmer under my care (Mr. Roberts, of Everton) who has repeatedly suffered from attacks of chronic iritis. On the present occasion the disease had advanced slowly, and too insidiously to create uneasiness; a month passed away before any one examined it, and, when I saw him, it had made considerable progress. Regarding this as a very severe case, I treated it accordingly, and with the best results. In truth, the disease is inflammation, has a tendency to produce the effusion of lymph and the

destruction of the pupil, and must consequently be attacked by the same remedies as acute iritis. It will not be necessary to bleed to the same extent; but in all cases where the patient is young, and the pulse sufficiently full, I prefer bleeding from the arm to the application of leeches in the first instance. After this, mercury in some form or other must be given: it will not, however, be necessary to give it in the same doses as in acute iritis: it is much better, in fact, gradually to affect the system with doses of blue pill, combined with opium, hydrarg. c. creta, and Dover's powder, or any other form of mercury that may be found suitable to the peculiarities of the patient's constitution.

Some will not bear mercury in any form—others are so feeble that it is impossible to administer it; but we have a powerful remedy in turpentine, which we shall more particularly consider when speaking of syphilitic iritis.

Mr. Tyrrell well remarks, in speaking of the causes of chronic iritis, “That the disease sometimes commences in this form, from the same causes as produce the acute stage; but very frequently it is induced by reducing the acute disease *by antiphlogistic means, without the aid of mercury*: the redness and pain being relieved, and the vision in a degree improved, the patients are considered as cured; whilst this insidious but destructive stage still exists, and goes on to occasion the mischief”—which I have described.

Now and then a patient is brought to me in whom the antiphlogistic plan of treatment has been carried as far as possible, and yet the disease has still gone onwards, and the power of vision is all but lost. I have seen such cases many times, and the blanched lips, feeble pulse, pallid countenance, and cold extremities, clearly proved the extent to which depletion had been carried. How are we to treat a patient applying for relief under such distressing circumstances? If the eyes are examined the irides will be found dull, the pupils small and lozenge-shaped, and fixed from adhesions of the pupillary margins to the anterior capsules of the lenses; the zone of vessels round the cornea will be distinct, broad, and of a dirty dull-red colour: this is occasioned by the distension of the sclerotic vessels with red blood.

It is clear we cannot give mercury



here; and yet we cannot cure the disease without it. The patient will, perhaps, complain of great depression, loss of strength and appetite, the hands tremulous, the gait feeble and unsteady: night-sweats, and other symptoms, indicate a great want of general power. He will very likely experience, also, some pain in the eye and over the eyebrow. This may be removed, by rubbing in, night and morning, some blue ointment, combined with opium and belladonna. Under any circumstances belladonna must be rubbed upon the eyebrow two or three times a day.

Our first efforts must be directed to improve the state of the system. A generous diet must be allowed, the bowels kept open with colocynth and henbane, and some mild tonic administered. I generally give the iodide of iron, or the pot. iodid. with infusion of chirayta, or sulphate of quina and infusion of roses.

In a short time, the general health, under ordinary circumstances, will improve. We must then give, in addition to this, small doses of mercury with chalk, and they must be gradually increased, and a blister applied to the back of the neck. This plan of treatment holds out the most reasonable prospect of success; but it is to be feared in such cases complete recovery in the majority of patients is not to be hoped for.

After an attack of either acute or chronic iritis, should the eye appear weak, particularly if there remains any degree of chronic conjunctivitis, the superficial vessels being in an enlarged and atonic condition, the eye may be bathed with vinum opii and water, or a weak solution of nitrate of silver, which will remove the "weakness of the eye" the patient complains of, and restore it to its normal state.

### III.—*Iritis from Wounds.*

The symptoms and results of iritis from injury are the same as in the forms already considered, with the addition of the evidence of some injury.

It will be necessary to remove, if possible, the foreign body; but this plan of procedure will depend in a great measure upon its size, situation, and nature. If very small it had better be allowed to remain, unless its removal can be effected very easily, as it will in all probability become encysted. If

large, it will be better to remove it, unless of a composition which the aqueous fluid can dissolve.

The treatment of this form of iritis will not differ from that already pointed out, when speaking of acute iritis. In addition to bleeding, I wish strongly to advise the use of calomel, for although it does not entirely destroy the inflammatory action during the presence of the extraneous body, nevertheless the judicious employment of mercury has the power of considerably retarding the injurious results of iritis. The treatment of this form of iritis may, perhaps, be best illustrated by the following very interesting case:—

CASE III.—Mr. W——, of Retford, applied to me in the summer of the past year, in consequence of an injury he had sustained in one of his eyes. He stated that some time ago he had injured his eye with a small and very sharp piece of iron—that he had taken some opening medicine, and applied a blister to the forehead over the suffering member. It is needless to point out to the veriest tyro the folly of placing a blister in such a situation during an acute attack of inflammation of any of the textures of the eye.

On examination, a small wound of the outer margin of the cornea could easily be discovered, but no part of the foreign body remained: four or five days had passed since the accident. He complained of great pain—could hardly look at the light for a moment; the tears flowed continually from the eye; the whole of the cornea was clouded; the iris, as well as I could see, from the circumstances already alluded to, contracted and discoloured; it had lost its peculiar brightness, and appeared dead; a portion of the pupil was filled with an opaque deposit, and hypopion also existed; the red zone of vessels and other distinctive marks of iritis were present. He was largely bled; leeches were applied afterwards, and the system rapidly affected with calomel: belladonna to the eye-brow, and three grains of potass. iodid. three times a day. Under this treatment the case gradually improved, and the poor fellow recovered his sight perfectly: the only thing to regret was a slight opacity caused by the wound in the cornea; but this was not sufficiently large to interfere very materially with useful vision.

### III.—*Specific forms of Iritis.*

I must defer for the present a very minute examination of syphilitic iritis, and also of cases in which inflammation of the iris comes on in patients labouring under a gouty diathesis. I will, however, venture to express the opinion that in the great majority of cases, in which an attack of syphilitic iritis comes on, no mercury has been taken for the cure of the primary disease. It has been remarked that, in addition to pure syphilitic iritis, there is another disease which very closely resembles it, and which has been termed pseudo-syphilitic, as being compounded of two states of the system (as regards its cause), viz., the syphilitic and the mercurial. Mr. Travers here observes that, although "iritis is frequently met with where no mercury has been taken, it is seldom or never seen as a sequela of syphilis, where the system has been brought under the influence of mercury." Mr. Hewson, who has devoted much attention to an examination of the diseases of the eye, writes—"iritis, the result of syphilis, is rarely observed except where mercury has been inefficiently or inadequately administered." Mr. Middlemore observes, with his usual force and accuracy, "from a careful review of all the cases which have fallen under my observation, it appears to me that iritis occurs much more frequently after a venereal sore has been healed without mercury, than when this medicine has been used for its cure, and also that it occurs with the greatest severity, as well as with the greatest frequency, as one of the secondary symptoms of syphilis, when the original disease (the chancre) has been allowed to heal without the administration of hydrargyrus. It is said that inflammation of the iris may occur as a consequence of those anomalous ulcerations about the genitals, which are presumed to arise independently of venereal affections; just in the same way as pure syphilitic iritis results from genuine chancre. This may be the case. I am not prepared to disprove the opinion; but I certainly do not believe it to be correct."

A very careful examination of this subject has fully convinced me that iritis comes on much more frequently after chancre where no mercury has been given, and also that it is much more severe. If the reader examines

the cases of syphilis reported by Dr. John Thompson, and also by Mr. Rose, treated without mercury, iritis is mentioned as a not very unfrequent secondary affection. I have heard of cases in which women have been attacked with iritis, having contracted venereal disease from their husbands, and through delicacy, or ignorance of its nature, failed to mention it to their medical attendant. Mr. Middlemore quotes a case originally recorded in the *Medico-Chirurgical Review*, where iritis occurred in a nurse from syphilitic ulceration around the nipple, produced by suckling a child whose mother had the venereal disease prior to its birth, and this nurse had taken no mercury for the sore around the nipple. This writer also quotes another case exactly similar.

Mr. Lawrence has noted one peculiarity in syphilitic iritis, viz., that the inflammation is always of the adhesive kind, for "he has never observed it to terminate in the effusion of pus:" and this fact was proved in the case of a lady, who had inflammation of the deeper-seated tunic, from the extension of the inflammatory action, which originally constituted syphilitic iritis, and which ended in the bulging of the sclerotica, which appeared distended with pus. An opening was made, but none was discharged, and Mr. Lawrence concluded that it was lymph, and not pus.

In the treatment of syphilitic iritis it will be advisable to bleed generally, or locally, according to the condition of the patient, and afterwards freely to evacuate the bowels. By the former plan the circulation will be lowered, by the latter the system prepared for the exhibition of mercury, which must be administered in such doses as the peculiar nature of the case points out.

Mr. H. Carmichael, of Dublin, has advised in certain cases the administration of turpentine (that is, in cases where mercury cannot be given) as a valuable substitute for calomel: he advises it to be administered in this form.

*R. Olei Terebinth. Rect. ʒj. ; Vitellum unius ovi, tere simul. et adde gradatim emulsionis amygdalarum ʒiv. ; Syrupi corticis Aurantii ʒij. ; Spir. Lavandulæ. compositi ʒiv. ; Olei Cinnamomi guttas tres vel quatuor. Misce. Sumat cochlearia larga duo ter in die.*

It is needless to remark that bella-

donna must be applied to the eye-brow as in the other forms of iritis, and blisters may be tried in its more chronic form; but in no kind of inflammation of the iris are they productive of so little good.

#### IV. *Scrofulous Inflammation of the Iris.*

The very great difficulty we have in obtaining a view of the eyes of children, frequently causes this disease to be overlooked, and considerable progress is often made before its true nature is sufficiently ascertained. Mr. Lawrence remarks, "in strumous children inflammation commencing in the external parts of the eye extends to the iris. This strumous iritis is usually attended by some change in the structure of the cornea. The opaque state of the cornea prevents you from observing the changes taking place in the iris, so that the very existence of iritis is not known until it has gone through its course, and come to an end."

But from the frequency of its occurrence it ought always to be suspected, and the most careful examination made, and iritis will, in the great majority of cases, be found combined with inflammation of the cornea, and also of the membrane covering the aqueous humour in strumous children. Its effects are similar to those produced by the other kinds of iritis, and may lead to a change in the colour of the iris, to contraction and closure of the pupil, adhesion of the iris to the surrounding parts, or to staphyloma.

But how are we to treat such cases? Bleeding and mercury, to the extent already advocated, would make matters worse. In the early stages, in a moderately strong child, a few leeches may be applied to the lower lid, and the bowels must be freely opened with a full dose of calomel and rhubarb. I think the best form of administering mercury in these cases is in the form of the blue powder—three grains of hydr. c. creta, five of sesquicarbonate of soda, and two of Dover's powder, may be given every night at bed-time. If we give calomel, push it to ptyalism, and still go on with it, under the idea that it is the proper remedy, I apprehend the patient's constitution will, in nine cases out of ten, be seriously injured, and vision either altogether lost or very seriously impaired. In such cases the exhibition of the sulphate

of quinine is followed by the happiest effects. As the constitution improves under its influence, vision improves also, and the improvement of the general health of the patient appears simultaneous with the improved condition of the eye. The salicine is also a valuable medicine, and may be given where quinine disagrees. I knew a lady suffering from a disease of this nature in which quinine could not be taken, but where the salicine was administered with the happiest effects. It appears that it does not possess any alkaline principle, similar to quina or cinchona, and is entirely inferior to them. M. Magendie remarks, "it is a powerful febrifuge, as I have verified in numerous cases of intermittent fevers at the Hôtel Dieu. I have frequently found it succeed when the sulphate of quinia has failed, and vice versa."

The hydrochlorate of baryta has been highly spoken of, both by Mr. Phillips, in his Lectures on Surgery, and also by Dr. Payan, as a valuable remedy in strumous ophthalmia. Lisfranc also speaks in high terms of its excellent effects. I have only as yet tried it in one or two cases, and cannot therefore speak from experience of the advantages attending the administration of it, and I am less inclined to do so from having repeatedly witnessed the advantages derived from the remedies above mentioned, more especially the sulphate of quinine.

The local remedies are the same as in the other forms of iritis, and are only useful where you have spasm of the lids: opium and warm water, as hot as can be borne, will frequently afford relief, and give great comfort to the sufferer. In the latter stages of the disease great irritability of the organ is often complained of, and this may easily be removed by the daily use of the vinum opii, alone, or combined with a weak solution of the nitrate of silver; half a grain to an ounce of water.

In speaking of syphilitic iritis, blisters were considered of little use: in this form (strumous) of inflammation of the iris, counter-irritation must always be employed. As soon, therefore, as the inflammation is somewhat checked by the application of leeches, and the administration of a brisk purgative, blisters should be applied behind each ear, or to the back of the neck, and

# MR. WRIGHTSON'S CASE OF DELIRIUM TREMENS AND

kept open; or, what is better, a small seton may be placed in the neck or arm: this of course will leave a mark, and must not be attempted, if the patient is a young lady. Air and exercise, under proper regulation, must be light, and easy of the body must be sponged with warm water, and rubbed with a rough cloth, and every measure adopted to improve the general health, and to remove that peculiar morbid disposition on which the disease is essentially dependent. It is only necessary to remark, that, in the more severe cases of iritis, the room must be darkened, and when it is necessary to examine the eye, it must be done as soon as possible; nor must a full beam of light be allowed to beam directly upon it, nor is it right that the weakened organ should be long exposed to its influence. Of course, during the active stage, the strictest attention must be paid to the diet of the patient; little or no solid food must be taken; in fact, the most rigid fever diet of our hospitals must be enforced: this, in private practice, will be difficult to accomplish, and, if not attended to, will render, in a great measure, useless the best possible treatment. It will therefore be necessary that the importance of attending to his diet should be enforced, in the strongest possible manner, by the medical attendant, and if told that the restoration to sight, or loss of vision, will entirely depend upon the strictest attention to the orders given, few will be so foolish as not to obey them; if they do, the surgeon will have the satisfaction of knowing that he has done his duty, and the patient may one day have to lament most bitterly his extreme folly.

(Of course every case, in each division of iritis, will present some varieties; no two cases are exactly alike; it will therefore be quite impossible for me fully to point them out. On reading over these papers, already extended beyond the limits at first marked out, I have detected many omissions that want of space renders it impossible now to enter upon; in truth they are only a skeleton map for the student to fill up from time to time, from an extensive field presented for his research by

diseases of the eye. The subject is far from exhausted, and I hope to return ere long to its investigation.

Retford, March, 1842.

## DELIRIUM TREMENS AND FRACTURE OF THE SPINE.

By R. WHITE WRIGHTSON, Esq.

In medical charge of the left wing 3rd Battalion Artillery.

(For the Medical Gazette.)

A EUROPEAN was admitted into hospital on the 24th October, 1841, with delirium tremens. The nervous excitement was excessive; the tongue dry and thickly coated; bowels confined; constant nausea, and pain over the stomach. He had been drinking four days. Calomel and opium, followed by the ol. ricini and ol. crotonis, were prescribed, and on the following day he was much better, although the nervous excitement was still great. The above treatment was followed till the 27th, when all the symptoms appeared alleviated; and after an opiate in the evening, he was tranquil, and fell asleep about 9 P.M. After sleeping an hour, he suddenly awoke in great fright, under the impression that fiends were dragging him to the regions below, rushed past the orderly in attendance, and threw himself from the veranda of the third story of the hospital, a height of 35 feet.

On examining the back, it was found curved forwards; there was a deep indentation over the third lumbar vertebra, and considerable swelling over the first and second. The lower extremities were in a semiflexed position, sensible to the touch, and he could extend the legs voluntarily. The pulse was small and labouring—75; skin cold, and perspiring freely: flexion and extension of the limbs, or the slightest pressure over the loins, gave him the most intense pain: there was no involuntary escape of the urine or fæces. Extr. opii. gr. iv., with stimulants of ammonia, æther, and camphor, were prescribed, with some brandy and water at intervals. As the pulse rose leeches were applied. A 12 P.M., the leeches were removed, in consequence of the pulse not improving: great tumefaction now supervened. The de-



lirium was quite subdued, and he expressed great desire to be attended by his priest. His intellect was quite undisturbed.

26th, 6 A.M. — The pulse much stronger; the body warm; the belly full and tumid: complains of great pain in the back and left side. The lower extremities continue quite sensible to the touch, and retain the power of flexion and extension. The urine was passed in the bed, but he could control the flow when so disposed.

R. Ol. Ricini, ℥iss., to be taken immediately. Ol. Ricini, ℥iss.; Ol. Terebinth. ℥iv.; Magnes. Sulph., ℥ss; Aq. lbss., to be used as an enema, and hot fomentations to be applied to the belly.

At noon, he again became exceedingly low, requiring stimulants. The bowels acted soon after the enema. The urine was retained, and on separating the legs for the purpose of introducing the catheter, the left leg was seized with severe spasmodic pain along the course of the anterior crural nerve, which immediately subsided on bringing the legs together. The urine drawn off was mixed with grumous blood. During the afternoon, the lower extremities were quite cold, and vitality was at a very low ebb, requiring the continued use of stimulants. At 10 P.M. the bowels had been freely moved, and a considerable quantity of urine passed with the assistance of the catheter. The pulse soft and regular; the lower extremities not so cold; and he was disposed to sleep.

29th.—Passed a good night; bowels rather inactive; urine passed voluntarily, but he was unable to move the left leg. Sensation in both remained perfect. He could now lie straight in bed. At 6 P.M., he had some difficulty in passing his urine. Thermometer in axilla, 100°; in the ham, 96°.

30th.—Complained of thirst: tongue furred; pulse full and strong; skin hot: he was freely purged, and had saline diaphoretic medicine, and at bedtime took pil. hydr.; pulv. antim., aa. gr. v.; calomel. et extr. hyoscyami aa. gr. iij.

31st.—Passed a very restless night; reaction considerable; skin hot; pulse strong, full, and somewhat hard; pain in the back and left leg, which comes

on in spasms; felt more severely along the anterior and inner part of the thigh and knee. He was bled to ℥viij.; twelve leeches were applied to the loins. Ordered 3i. pulv. jalap. co., and to continue the diaphoretic medicine.

At 6 P.M. the pulse was less frequent—90, and regular; skin cool; tongue clean, but rather dry in the centre; bowels freely relieved, and the urine drawn off contained less blood; no pain in the back, but numbness and inability to move the left leg. At bedtime he had extr. hyoscyami, gr. iij.; extr. opii. gr. ss.

Nov. 1st.—In the early part of the night he was restless, and after taking the pills he became worse, and a degree of low muttering delirium came on. The pulse continued good; skin cool. At 5 A.M. he suddenly became insensible; breathing quick and stertorous; pulse imperceptible; skin cold; countenance livid; urine and fæces passed involuntarily. He continued in this state, and died at half-past seven.

*Sectio cadaveris, twelve hours after death.*—The body was placed in a supine position, to prevent any post-mortem congestion or gravitation of blood towards the spine; and, with a view to the more full examination of the extent of injury, the spine was first examined.

*Back.*—On removing the integuments, a large quantity of coagulated blood was observed. This occupied a diamond-shaped space, bounded anteriorly by the anterior superior spinous process of the ilium, its inferior point being the centre of the sacrum, whilst superiorly it reached the last dorsal vertebra, extending along laterally by the false ribs. The weight of this coagulum was ℥iij. Blood was extensively extravasated amongst the muscles of the back generally, even to the neck, but especially under the tendons of the latissimus dorsi and trapezius. The spine was divided at the last dorsal vertebra, and the lower part, with the sacrum attached, was removed. The whole spinal canal was laid open above this division. The cellular membrane connecting the theca to the canal was of a vermilion hue. The external appearance of the theca healthy. On being slit open from the occiput downwards, its superior portion had a healthy pearly look; but this was lost on approaching the lower part, where



the membrane was of a redder colour. The medulla spinalis, at its upper part, was firm and healthy, but softer at its lower portion, and, indeed, was quite pultaceous. The lumbar portion exhibited a more injected state of the loose cellular membrane external to the theca, and clots of blood surrounded the nerves as they made their exit. The serous surface of the theca was highly vascular, and stained of a deep blood hue. The nerves seemed much thinned opposite the fractured and loose portions of the body of the vertebra, which must have compressed them on any change of position of the patient. The body of the fourth lumbar vertebra had been completely crushed to pieces; a large scale projected anteriorly, and must have been detached but for its connection with the anterior ligament. The spinous process was fractured through its whole length, and the interspinous ligament and muscles completely disrupted. The articular processes were on both sides fractured; and yet, notwithstanding the force which had thus smashed every thing both before and behind this vertebra, the centre portion of the body was in its place.

**Head.**—There was no congestion of the scalp; the external appearance of the dura mater was healthy: considerable effusion of serum between the arachnoid and pia mater gave it the appearance of a *blistered surface*. There was no opacity or thickening observed. The ventricles contained an ordinary quantity of serum, but had a soddened appearance, and the effused serum had probably escaped by the spine, as the medulla oblongata was much shrunk, and the little finger could be easily passed between it and the canal. The substance of the brain somewhat softened, and numerous bloody points appeared on slicing the white portion, which were quickly renewed if wiped off. The veins generally congested.

**Abdomen.**—Very extensive effusion of blood existed under the peritoneum, on both sides of the spine; the capsule of Glisson was distended with blood; two considerable patches of extravasation on the anterior surface of the liver; bloody effusion around each kidney; both iliac regions distended with blood, particularly in the course of the large nerves and vessels; liver

healthy, perhaps slightly softened; kidneys of an uniform red colour; the cortical part scarcely to be distinguished from the other substance; the pelvis of both contained effused blood; bladder had a considerable quantity of blood effused at its posterior part, behind the peritoneum. Its mucous surface was of a light rose colour, and contained about  $\frac{3}{4}$  of bloody urine.

**Chest.**—In the intercostal spaces on both sides of the spine there was a quantity of blood effused, and some old adhesions were observed on the right side. The lower lobes were much congested and engorged.

**REMARKS.**—The universal effusion from the serous surface of the brain and its membranes, and the shrunk state of the medulla oblongata, are very characteristic of delirium tremens; and as it appears the man was not an habitual drunkard, I am the less surprised that the mischief was confined to serous effusion, no opacity or deposition of lymph being observed. Notwithstanding the extensive injury, there was no appearance of any reparative process having commenced. This must be accounted for by the low state of vital energy—the result of continued over-excitement.

Had there been effusion of lymph, any formation of pus, any of that preparatory congestion which precedes the reparatory process, compression, partial and consequently destructive, must have taken place; but it is clear none such did occur, except mechanically and temporarily, the effusion on the brain and spinal marrow being attributed solely to the delirium. The coldness of the extremities observed on the 28th, the partial loss of power over the bladder, and the entire loss of motion in the left leg on the 29th, are satisfactorily accounted for by the dissection. The reaction seemed to be completely established on the 31st, and as no cerebral excitement had been noticed for several days, bleeding, it was hoped, might have been beneficial; but, perhaps, it would have been better omitted, as only serous effusion had taken place.

Fort William, Calcutta, General Hospital,  
Nov. 8th, 1841.

## CASE OF CAROTID ANEURISM.

*To the Editor of the Medical Gazette.*

SIR,

I was requested in January last to assist Mr. Christopher Hunter, of Downham in Norfolk, in the application of a ligature on the carotid artery; and I send you the particulars of the case (should you think them worthy of notice) for insertion in the pages of your valuable journal.—I am, sir,

Your obedient servant,

HENRY CHARLES JOHNSON.

6, Saville Row,  
March 22, 1842.

John Chase, æt. 29, residing at Lynn, in Norfolk, a stout, short-necked, muscular man, by trade a fisherman, discovered about ten days before Christmas last a small swelling on the right side of the neck, immediately below the angle of the jaw. The swelling gradually increased in size from the time it first attracted his attention. He had very frequently been engaged in pugilistic encounters, but never remembered having received a blow or injury which might in any way account for the existence of the swelling. Soon after Christmas he placed himself under the care of Mr. Hunter, and on the 22nd of January, 1842, the following was his condition. There was general enlargement of the right side of the neck, extending from the angle of the jaw towards the clavicle. No one portion of the enlargement of the neck was more prominent than another, but by carefully watching the part a distinct pulsation could be perceived. On examination by the hand, a tumor, of the size of a small egg, could easily be detected, situated at about the level of the thyroid cartilage, and extending inferiorly to within an inch and a half of the clavicle. The sterno-cleido-mastoideus muscle was stretched over it, and appeared to flatten its surface. Pulsation in the tumor, when examined from before or laterally, was very distinct, and pressure sensibly diminished its volume. On withdrawing the pressure the tumor assumed its former dimensions. Any interruption to the flow of blood through the trunk of the carotid artery below the tumor, suspended the pulsation in the tumor itself, rendering

it flaccid, and less perceptible to the touch. The patient did not complain of any inconvenience from the existence of the disease, and considered himself in perfect health.

The nature of the tumor being satisfactorily determined, Mr. Hunter proceeded to apply a ligature on the carotid artery, between the tumor and the arteria innominata. The patient was placed on a table, lying on his back, with a pillow under the shoulders, and the head inclined rather to the left side. An incision of three inches in length was made in the direction of the inner border of the sterno-cleido-mastoideus muscle, but rather nearer the median line of the body than the edge of the muscle itself. The incision extended quite to the lower part of the tumor, and from thence downwards to the upper border of the sternum. The skin, platysma, and fascia, being divided, several small veins crossed the direction of the incision; some were divided, and one of larger size than the rest was drawn to the outer edge of the wound, and the dissection then continued. The hæmorrhage was but slight. The sternal attachment of the sterno-cleido-mastoideus was separated from the bone, and a director placed beneath the outer margins of the sterno-thyroid and sterno-hyoid muscles, the fibres of which were divided in a transverse direction. The nervus descendens now did not appear in the dissection, being distributed to the muscles above the point of their division by the knife. The sheath of the vessels was thus fully exposed; and by means of a scalpel and forceps the artery was partially denuded, but separated as little as possible from the surrounding parts. A curved steel aneurism needle, armed with a ligature, was introduced beneath the vessel, from without inwards. The ligature when raised completely commanded the pulsation in the tumor. It was firmly tied, one end being divided close to the knot, the other remaining in the wound. A small strip of lint was placed in contact with the ligature, so as to allow a free exit for the escape of matter, and some adhesive straps were employed to keep the edges of the wound in contact. The artery at the point at which the ligature was applied was perfectly healthy. There was no difficulty with regard to the internal

jugular vein, during the operation, as it did not in any way interfere with the dissection. The artery, however, was at a great depth, and it was necessary to employ metal retractors to keep open the edges of the wound. The distance between the arteria innominata and the ligature could not have been more than an inch and a half.

22nd, vespere.—Slight bleeding from the wound; not much more than to wet the dressings. Complains of uneasy sensation about the epigastrium, approaching spasm in its character.

Pulse 80.—Very slight pulsation to be felt in the tumor.

23rd.—Slept but little during the night.

Pulse 74.—Tongue moist. Still complains of the sensation about the epigastrium and region of the heart.

To have some cold tea, with dry toast, and jelly in small quantities.

The dressings partly changed.

24th.—Pulse 80. Tongue clean. Bowels not relieved since the operation. The pain in the epigastrium has abated, but not altogether subsided.

Magnes. sulphat.  $\mathfrak{zss}$ . statim.

Vespere.—Wound discharging freely.

Pulse 90.—Bowels not acted upon.

Hydr. Chloridi. gr. iv. statim; Haustus Aperiens post hor. quatuor.

25th.—Slight cough. No pain in epigastrium.

Pulse 74.—Bowels open. Tongue clean. Appetite good.

$\mathfrak{R}$  Oxymel Scillæ  $\mathfrak{zj}$ .; Syrupi Papaver.  $\mathfrak{zss}$ .; M. Capt. Coch. med. j. urgente tusse.

To have broth and dry toast.

27th.—Doing well. Wound healthy, and discharging freely.

29th.—Mutton chop daily.

February 2nd.—Wound much contracted in size. Ligature firmly fixed in the wound.

3rd.—Walked about the house for a short time to-day. Requires an occasional purgative.

9th.—Walked out of doors.

13th.—The ligature came away this morning, the 22d day after the operation. The wound healed a day or two afterwards.

March 15th.—The patient quite well. A small hard knot remains in the situation of the tumor, without any pul-

sation. No perceptible difference exists between the right and left side of the neck; but on the right side the temporal artery pulsates with more vigour than on the left.

# CASE OF SERIOUS AND ALARMING HÆMORRHAGE AFTER THE EXTRACTION OF A TOOTH.

By H. DAVENPORT, M.R.C.S.

Surgeon, Eltham, Kent.

[For the London Medical Gazette.]

ON Sunday, 27th February, 1842, about half-past seven, A.M. Mr. Phipps, jun. æt. 23, stout and healthy, called on me and requested that I would extract a molar tooth of the lower jaw, that had given him considerable pain for some weeks, which I did, the tooth coming away without any difficulty, and perfectly clean. He returned home a short distance to breakfast, and made a hearty meal. At four o'clock P.M. he called me in, and stated that hæmorrhage had come on about two hours after the extraction, and continued ever since. On examining the socket I found large clots of blood, which I removed, and immediately plugged it very tightly with lint dipped in a solution of alum and zinc, and placed a cork over the lint, pressing firmly into the socket, the upper jaw resting upon it. I called again in two hours: hæmorrhage going on as usual, rapidly. I removed the plugs and took a portion of fine wadding in small pieces dipped in the solution of alum and zinc, and gradually pressed it to the bottom of the socket, thinking though I had plugged it tightly before, I had not pressed on the extreme point of the socket whence the hæmorrhage proceeded, and placed the cork on it as before. I saw him again in two hours; no alteration; I removed the cork, and made firm pressure with my finger and thumb on the sides and top of the socket for half an hour, which appeared to arrest it for a short time: when the finger and thumb were removed it returned again. I again removed the plug, and dipped some lint in a solution of kino and a strong solution of alum, and pressed it firmly in the socket as before, and directed him to hold a

strong solution of alum constantly in his mouth. At ten o'clock it apparently ceased, the solution coming away from his mouth colourless. I then left him.

Feb. 28.—Visited him again this morning between seven and eight o'clock, and was informed that the bleeding returned shortly after I left, and his father then tried a remedy of his own, by filling the cavity with resin very finely powdered, and pressing it down with lint; it then ceased for two hours and a half, when, in the act of coughing, it came on as bad as ever, and continued till morning. On examining the cavity, I found large clots almost as solid as liver formed round the plug, and nearly filling the mouth, and was surprised that such firm coagula did not check the hæmorrhage: the blood still flowed from his mouth. I again removed the plug and coagula, and thinking that burnt alum deprived of its water of crystallization might have a better effect, I tried it, but without much apparent benefit. At twelve o'clock no change for the better. I now passed a stick of caustic finely pointed to the bottom of the socket, and against the sides, and plugged it as before. Saw him again at three o'clock: profuse hæmorrhage still going on, which now became alarming, and his friends anxious from the large quantity of blood he had lost, which could not be less than seven pints. At six o'clock I tried a new preparation, which Mr. Hill, of Guy's Hospital, recommends in his work on Cupping as very effectual in stopping hæmorrhage, called *licopodium*, or devil's puff; but it had no effect in this case. Half-past seven, blood still flowing, though the pulse had not given way a great deal: countenance anxious, and complained of lassitude and debility. The case now became very serious, and I felt convinced in my own mind that unless we could check the hæmorrhage, in a few hours it would prove fatal, and suggested to his father the propriety of having another opinion, which was immediately complied with, and a carriage was sent to town to fetch Mr. Thomson, of Grosvenor Street, surgeon dentist, being informed he had once checked hæmorrhage of some hours' standing in a similar case. Eight o'clock, thirty-four hours from the commencement of the hæmorrhage,

when carefully watching him, and thinking I would apply the actual cautery, he suddenly became very sick and faint, and brought up a considerable quantity of clotted blood, from which time the hæmorrhage ceased, and did not again return, leaving him very weak and low, having lost between nine and ten pints of blood as nearly as I could judge. Mr. Thomson arrived at half-past eleven. The hæmorrhage had ceased for three hours, so that the patient was not disturbed.

I forward this case to shew the difficulty that sometimes arises in checking hæmorrhage from a dental cavity, and if it had continued, as a last resource, I know of no other remedy than tying the carotid artery, which was once performed in a similar case by Sir B. Brodie, but did not succeed: but perhaps some of your correspondents may inform me of some remedy that might prove more effectual than any I have used in this case.

#### FACTS AND IMPRESSIONS ON MEDICAL SUBJECTS.

(For the *London Medical Gazette*.)

WE have room for a few more extracts from this volume, which may not be in the hands of all our readers. The first is of a better quality than the desultory passages we have before selected. The second is in the author's usual vein,—a case,—which we dare say is meant to convey a great deal, but unluckily the only thing it clearly displays is the cloven foot of professional heresy. Oh! if those who favour medical innovations could see themselves reflected in the form and colours in which steady orthodox practitioners see them, how would they shrink from their mirror'd horns and tail, and sable complexion! how quickly would they repudiate their errors! And indeed we are happy to say they are in truth constantly doing so. Thus the late Sir ———, who was much indebted to Dr. S., the colleague of the late Dr. Harrison, for attendance in his family, told Dr. S. that he was sorry to be compelled to take the step, but he was obliged to declare to him, that for the future they must be strangers, both in public and in private: however, he added, to soften the blow, that he would occasionally look in upon him. Thus, most properly,



did Sir ——— give up his deliberate opinions and his friend, avowedly on representations made to him by his own colleagues, as to the odiousness of the system he had temporarily favoured. In like manner Dr. ——— expressed to the same party, who was attending a child of his, the pain which he continually suffered from the remarks of his profession on the subject, and finally turned him off. The late Sir Astley Cooper again, probably the ablest surgeon, take him all in all, the world has bred, but not less able as a shrewd judge of the world, was told by Dr. ———, a living London physician, eminent for his general talent and scientific character, as well as for his professional knowledge and judgment, that having been sent for into Kent, to see a patient, the apothecary begged the doctor would look at another, the subject of some nervous disorder, who, among various odd symptoms, could only discern things properly when held to her upside down; and the doctor accordingly saw her read inverted books: "My dear sir," said Sir Astley, "that is very curious, but you know you must not tell it." Here are useful lessons! We know captious people say, "how is knowledge to be improved, if we are to suppress every thing new?" To this we might reply boldly, what occasion, pray, is there for the improvement of knowledge? would you excel all that has been? would you be *felicior Augusto, melior Trajano*? a more prosperous surgeon than Cooper, a better physician than Baillie? And pray what did Harvey get by discovering the circulation of the blood? why, he lost his practice: or what did Galileo do, when he found that proving the Copernican theory true, threatened to bring him to the stake? Most properly, he gave up the discovery, and allowed the earth to remain theoretically stationary. And pray did this prevent the truth, which he abandoned, becoming established? Quite the reverse: it is for the interest of truth itself to suppress it: like the chamomile, the more it is trodden on, the faster it grows, or

"*Duris ut ilex tonsa bipennibus,  
Per damona, per cœdes, ab ipso  
Ducit opes animumque ferro.*"

It is therefore right not to foster or promulgate new truths for our interests sake; and most important to repress

and crush others who advocate them, partly for the same reason, partly as experience shews this to be the condition under which knowledge has always advanced.

*Of amputation of the breast.*—This operation is now much less frequently resorted to than formerly. The grounds upon which it is to be recommended have shifted in the advance of knowledge, and the opinions of the profession have not yet had time to settle on their new foundations. Perhaps the following observations, by one who has had fair opportunities of studying the subject, may on this account prove of present use.

Towards thirty years ago I was taught to look at this operation exclusively in reference to cancer, and to consider cases of cancer of the breast as referable to two classes, one in which the disease might be removed by an operation with a tolerable chance of its not reappearing; the other in which, either from the advanced stage of the cancer, it was too late, or from the disease co-existing in other parts, it was impossible, to contemplate its extirpation. So a small scirrhus lump in the breast, with no enlargement of the axillary glands, was a proper case to operate on; and a very large tumor, or the tumor being ulcerated, or the lymphatic glands being affected to an extent not admitting their simultaneous removal—these were conditions that contravened the operation. The breast was to be removed only when the whole extent of the existing disease could be certainly removed with it. And the aim of the operation was permanently to eradicate the cancer, and the disposition to cancer. It was, indeed, well known that the disease would often reappear, when all the circumstances favourable to the operation had been present; but it was confidently believed that a great many patients on the other hand were permanently cured by the operation.

The latter opinion was erroneous, and sprung from the imperfect diagnosis of cancer of the breast, which these obtained. Many tumors of the breast were considered to be scirrhus, which were of another nature, and these swelled the list of cases represented as permanently cured by the operation.

Now that scirrhus is positively iden-



tifiable, and need not be confounded with any other disease, experience tells us that the complaint recurs in ninety-nine cases out of a hundred; that it commonly reappears in from half a year to two years after the operation; that occasionally, but most rarely, its reappearance is put off for several years; and that in several cases, when let alone, the disease is very slow in its progress, and till the last mild in its symptoms.

Under these circumstances, some surgeons hesitate to recommend the operation in any case of scirrhus; as there is a moral certainty the disease will come back; a great probability that it will come back very shortly; and no evidence, as it is assumed, that the operation has the power of at all prolonging the patient's life.

My own opinions do not go so far as this. There are many cases in which I think the removal of a diseased breast the most judicious practice. What these are I will endeavour to specify. They are of two kinds—certain scirrhus tumors, and certain other tumors of different character.

1. Suppose a scirrhus of the breast, the tumor unadherent to the pectoral muscle, the axillary glands slightly if at all affected, occurring in a patient whose general appearance and whose bodily feelings argue strength of constitution, in whom there is no suspicion of the disease having yet attacked other organs, while in the breast it is now beginning to advance, the tumor being painful and sensibly enlarging; in such a case I think the patient would decide wisely in submitting to the operation.

Because, in this form of the disease, the pain to be expected, in its natural progress, is extremely severe. Because, the breast being removed, the subsequent outward spread of the disease might be confined to the axillary glands, where it is much less painful. Because, on the other hand, the disposition to scirrhus growth might for a long time be rife about the breast alone, and show itself only in the return of one or two tumors in the same pectoral region, which might be again removed. Because in either case there would be one, in the latter case two periods of indefinite duration of restored health and hope. Because it is always possible that any single

case may prove the fortunate one, in which the disease is slow in reappearing.

Nor should I be deterred from recommending this course, by the fact of the tumor having begun to ulcerate; the other favourable conditions being present. Nor, on the other hand, if the scirrhus tumor did but occupy a quarter or a third of a full voluminous breast, would I amputate the whole of the breast, but take away the portion only including the manifest disease. Both operations I have performed, and have been satisfied with the result.

Of the arguments advanced above for amputation of the breast in the class of cases specified, there is but one towards which the experience of every surgeon will not furnish him with instances; and that is the contemplation of a second operation. The following cases are given to exemplify the occasional utility of this practice, and they are not the only favourable examples I have met with.

In March 1835, with the assistance of Mr. Sutherland, of Caroline Street, Bedford Square, I removed a lady's breast for scirrhus. She was unmarried, aged about 50, thin and spare in habit: the entire gland was indurated. It formed a small tumor only. The integuments were very lax, the tumor unadherent. In July 1836, I again saw this lady; there was a firm, elastic, cartilage-like tumor, of an oblong form, not so large as the original tumor, involving part of the cicatrix. This I removed by a second operation. Mr. Sutherland, two months ago, assured me that this lady had remained perfectly well since. (March, 1842.)

In May 1835, Mr. Stanley removed the right breast of Mrs. N. She was 67 years of age, had borne six children, and had been aware of the existence of a tumor of the breast for three years. The wound had healed favourably, and there was no tightness of, or traction on, the cicatrix: she was a person of a full habit, strong, and unbroken by years. In six months a new lump formed, extending to the upper part of the cicatrix; towards the summer of 1836 it had acquired the size of a small orange, when she consulted me, and I removed it. It proved a circumscribed tumor of the more succulent and softer form of scirrhus; in my experience that of rapidest growth. This patient I

saw during the present winter, and have several times before seen her since the second operation; once or twice there were threatenings, fulness and uneasiness about the neighbourhood of the cicatrix;—which dispersed on applying leeches. Now, and now only, the disease is certainly reappearing in the other breast. It is probable that, in these two cases, certain in the last, much suffering has been saved, and in all probability life prolonged, by the two operations.

Neither do I see any argument that can be sustained against the operation in the class of cases supposed. I have never lost a patient through the operation; neither, for many years that I have learnt to dress the wound lightly, and have allowed the patient in a few days to use the arm a little, have I known recovery from the operation protracted: nor do I believe that in any case the march of the disease has been precipitated by the operation. The only but most serious drawback against it is, then, the pain; if that could be avoided, or if the patient is of that firm nerve to bear it, there can surely be no doubt the patient will have gained by losing the tumor.

When the disease is advanced beyond a certain point, when other organs are affected, when the patient is worn in constitution, pale, feeble, timid,—in these cases the operation cannot be recommended. In this unpromising class I include, of course, cases where the disease, as yet confined to the pectoral region, has sensibly produced a change in the cellular and adipose tissue around the indurated breast.

2. The other class of cases, in which amputation of the breast is advisable, comprises great enlargements of the breast, combining induration and a cystiform character, of which one remarkable instance is related in Mr. Mayo's Pathology; likewise some advanced cases of the sero-cystic disease of the breast described by Sir Benjamin Brodie; likewise, large moveable tumors, not malignant, nor adherent, but painful and increasing, situated in the pectoral region, but of uncertain relation to the gland, of which an instance again is given by Mr. Mayo: finally, such cases as the following:—

A healthy-looking young woman, between 20 and 30, for some time had observed a swelling, with occasional

uneasiness, in the left breast. During the last few months it had increased rapidly, and had become extremely painful. The breast was very large; upon the inner aspect it had a healthy appearance; in front and without several large veins showed themselves through the integuments, and the gland of the breast felt much enlarged, firm, elastic, and as if it contained fluid at parts. The skin was nowhere tensely adherent to the tumor; and the tumor moved freely on the pectoral muscle; and the axillary glands were not affected. On puncturing the breast at two parts, two cysts were opened, from which several ounces of turbid brown fluid were evacuated, leaving the tumor not much diminished in size, and not altered in character. I then amputated it. The patient speedily recovered, and continued well at the expiration of a year, since when, now two years, I have heard no more of her. The tumor, when cut through, looked like fungoid disease or medullary sarcoma, and, in the turbid fluid expressed from it, Mr. Tomes saw the larger oval corpuscles of a granular appearance, common in that disease, to which family, no doubt, such tumors belong. In a more systematic notice of this subject, the case here detailed would have fallen under the general head of malignant disease; but from the uncertainty of the diagnosis, practically, it is as well to place it apart from ordinary scirrhus of the breast.

*Caries of the spine.*—Some years ago, the late Mr. Robinson, of Weymouth street, requested I would look at a lad, about 13 years of age, a young relative of his, who ailed something, but they could not make out what. After cross-questioning him, stripping him, and looking him over carefully, I made out these symptoms—that he had occasionally pain extending along the side, in the direction of the middle ribs; that his hands and arms would at times go to sleep when he rested upon them at his desk, and that an obscure sense of inward soreness could be produced, by tapping the lowest cervical and upper dorsal spines. I accordingly made an issue in this region, recommending that the boy should remain at home and be kept quiet, and lie down a good deal. After some weeks he became well.

It must have been a year to a year

and a half before I again heard of him. He had been at school, enjoyed his health for a time; then he again fell out of condition. His legs seemed to fail him; sometimes they would catch and cross, and throw him down. He had indeed now manifest spinal disease: there was an evident projection of three spinous processes at the lower part of the back. Accordingly I recommended that he should be kept constantly recumbent, and an issue made on one side of the projecting vertebræ. This treatment was pursued for two or three months; and he was taken to the sea-side, and every care observed; but he got worse, and the paraplegia increased. Then Sir Astley Cooper saw the lad with me, and the usual routine of spine treatment was gone through: still the boy got worse, when Mr. Robinson said to Sir Astley Cooper and myself, "The boy is certainly worse; will you object to Dr. Harrison's plan being tried, as yours has unfortunately failed?" Of course we assented, and the boy was placed under the care of Dr. Serny, Dr. Harrison's successor. It was not long before he began to improve, and, in fine, in two to three years he was perfectly restored. Every one knows now that Dr. Serny's plan consists in keeping the patient in the recumbent posture, taking off all strain from the spine, by lacing to the body two shields—one before and the other behind; and making systematic extension of, and pressure on, the spine. Dr. Serny very liberally shows his apparatus to every one; and having seen the good results effected on the patient whose case I have given, I availed myself of Dr. Serny's politeness to look at several of his patients while under treatment. Their healthy cheerful look—the look of physical relief about them—so different from the usual worn and suffering look of spine patients, convinced me that Dr. Serny's plan is the proper one for caries of the back. Then I wondered how it was this plan had been so decried. The principal reason may have been this. Dr. Harrison used to talk utter nonsense about his practice. He said, I believe, that all spinal disease originated in displacement, and that by his plan the bones were forced back into their places. And it was perhaps but natural that those who heard that his practice was based upon facts so false

should have thought the practice must be good for nothing, or worse. But there is no reason why an ignorant person should not fall upon a good remedy; although, unluckily, his ignorance will lead him to apply it indiscriminately; and the failures thus arising from his ignorance tend materially to strengthen the first conceived prejudice against him. I repeat that it now appears to me certain, that, for caries of the back, absolute rest, with gradual extension, is the proper treatment. How desirable it is that this practice should be generally and systematically adopted! Even Mr. Verral's plan of prone support, which is an approach to it, in my own experience much exceeds our old methods in efficacy.

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ANALYSES AND NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

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*A Manual of General Therapeutics, with Rules for Prescribing, and a copious collection of Formulæ.* By D. SPILLAN, M.D. Fellow of the King and Queen's College of Physicians in Ireland. London, Renshaw, 1841. 8vo. pp. 458.

DR. SPILLAN, in his preface to the above work, after noting the distinction between *rational* and *empirical* practice, complains that the treatment of many of the diseases which fall under the cognizance of the physician cannot yet be styled rational. "We know," he observes, "the value of mercury in the treatment of syphilis; of tartar emetic in pneumonia; and of colchicum in gout; such knowledge, however, is confessedly empirical. We cannot connect the action of these substances with the lesion to the removal of which they are adapted. We know from experience that they are useful; we do not know why?" It is, therefore, in order to fill in some measure this hiatus in medical knowledge, that the present treatise is intended; the author's aim being to "establish the science of therapeutics on rational grounds, as far as that can be accomplished in the present state of medical science;" "to ascertain the laws to be followed in the employment of those methods of

cure which have been dictated by reason, deduced from the principles of physiology and pathology, or sanctioned by judicious and well-trained experience;" and to enable the physician "to justify the exhibition of the remedies which he employs, by reference to their primary action, and to the organic changes that they are calculated to produce."

Although we cannot say that Dr. Spillan has done much towards the accomplishment of these high objects, yet we are bound to add that the fault is in the subject, more than in the author. The mortifying truth is, that we cannot yet (in by far the majority of cases) trace any connection between the nature of the remedy and its action; we can produce a definite effect by certain means, but cannot tell why. Our inquiries must always terminate in some general fact, of which no account can be given, but that such is the constitution of nature; and attempts to pursue our inquiries farther can but lead to confusion, by blending truth with conjecture; only overlaying it with a mist of apparent explanations that fill the ear, but teach nothing to the understanding; and that are perpetually shifting and changing according to the popular theory of the day. The surgical author of the last century ordered a poultice in order to relax the over-extended fibre, soothe the enraged spirits, and qualify the orgasmus therein stirred up." The modern orders his water-dressing, in order to "allay a sense of irritation in the organic nerves." What do we learn more from these theories, than the fact that a poultice is good for a phlegmon?

Yet a very useful work may be made by gathering together what is really known of the action of medicines on the body, both in health and disease, and of the rules for their administration, which have been collected by the general observation of physicians up to the present time: and Dr. Spillan's work will be found to contain many useful practical maxims, collected from sound modern authorities. The fifth chapter, in particular, contains in forty pages a most judicious summary of whatever has been really ascertained by experiment concerning the *modus operandi* of medicines; their absorption into the blood, their deposition in the various organs, and their elimina-

tion by the secretions. This chapter is condensed from Dr. Herr's "*Theorie der Arzneiwirkungen*." If we are disposed to find fault, we might allude to the occasional careless composition and inaccuracies to be met with in the latter half of the book; the too copious extracts from Barbier's work on Therapeutics; and the want of a table of contents and running title. In a work of this kind, an easy means of reference to particular passages is above all things desirable; and the author should consult the convenience and comfort of his readers, as well as provide for their instruction.

*Outlines of Human Osteology.* By F. O. WARD. London: Henry Renshaw. 1841. 16mo. pp 528.

WE are glad to announce the completion of this work, the first part of which was published three years ago, because it is seldom that we meet with a treatise, on so old a subject as anatomy, that displays so much freshness of conception and original research, and, at the same time, such constant reference to the opinions and descriptions of others. In fact, every page bears ample testimony to the account which the preface gives, of the manner in which the work was composed.

"A minute description of the human skeleton," says Mr. Ward, "was first written, without reference to any other authority than that of nature. This description was subsequently enlarged and improved by comparison with the works of Cloquet, Cruveilhier, and other standard authors. Whatever contradictory statements came under my notice in the course of this comparison, were noted down, and made the subject of careful research in several extensive anatomical collections, particularly in that of M. Alexandre, which afforded me an opportunity of examining nearly 200 specimens of each bone. The results thus obtained were embodied in the work, and the whole subjected to a close and scrupulous revision."

The descriptions throughout are most minute and clear; the arrangement and subdivisions are methodical and sufficient, without being too minute and trifling; and, what is not of least importance, the printing is executed in such a manner that the divisions readily strike the eye. More-



over, the mere dry descriptions, of which the bulk of the work necessarily consists, are most agreeably diversified with physiological explanations of the construction and mechanism of the skeleton, especially of the mechanism of the carpus and tarsus, of the solutions of the radius and ulna, and of the obliquity of the neck of the femur, on all of which points we meet with the marks of original and ingenious research. Witness the following extract respecting the strength of bone:—

“A cubic inch of cancellous tissue was cut from the centre of the external condyle of an adult macerated femur, and subjected to gradually-increasing pressure, with the following results. It sustained four hundred weight, without sensible alteration; sank a little upon one side on the addition of the next half-hundred weight; and continued to yield upon any increase of pressure; so that when the weight amounted to 6 cwt. its height was reduced to half an inch. The reduction, however, took place entirely at the expense of the upper portion of the cube; its lower moiety, which presented a much closer texture, bore the whole pressure of 6 cwt. without visible alteration. The weight of the cube submitted to this trial was 54 grains troy. It was placed during the experiment in the natural position, with its principal fibres upright. The side on which the cube first gave way corresponded to the outer and posterior part of the condyle; and its structure was here evidently looser and more fragile than on the side which in the natural position had laid nearest to the axis of the bone. In Mr. Rennie's experiments on the strength of woods, a cubic inch of solid elm was crushed by 1284 lbs. avoirdupois—about  $2\frac{1}{2}$  times the weight beneath which the cube of reticular tissue began to yield. This comparison may assist the reader in forming a just estimate of the strength of reticulated tissue.”

We can most conscientiously recommend the work to the younger student, who is beginning the study of anatomy, as well as the more advanced, who wishes to add correctness and precision to the knowledge he has already obtained.

## MEDICAL GAZETTE.

Friday, April 1, 1842.

“*Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.*”

CICERO.

### ALLEGED DEFECTS OF VACCINATION.

IN our last number we laid before our readers the Report of the National Vaccine Establishment for the current year. Meagre as these documents have been on several previous occasions, that which the Board have recently put forth exceeds them all in scantiness of information. It tells us, in fact, nothing more than the number of thousands of armed ivory points which the Board have issued during the past year. On the extent to which, in this period, small-pox has prevailed in the provinces, as compared with the metropolis, or with former years—on the general feeling of the public in regard to the amount of security which vaccination gives—on the number of well-authenticated cases of small-pox succeeding to vaccination which have been reported to the Board, and on the character of such cases—on the working of the new Vaccination Act;—in a word, on the many interesting questions which the subject of national vaccination presents to the mind of an intelligent inquirer at the present moment, the Report of the National Vaccine Board says literally nothing, if we except the announcement, that provincial vaccinators are unable to keep up their own stock of lymph. We marvel at this literary parsimony, because it cannot be that they have nothing to tell us. The National Vaccine Establishment have correspondents and honorary vaccinators scattered over the whole country, and much valuable information must



of necessity be obtainable from their communications. Neither can it be said that the diffusion of such information is uncalled for, and would, if produced, be valueless. There is now lying before us a work published within the last month\*, in which the defects of vaccination are set forth very prominently; and, from a passage in the work, it appears that the Board were early made acquainted with the intention of the author to renew his attack upon vaccination. We are far from intending to insinuate that it is any part of the duty of the National Vaccine Board to refute the sophistries of Mr. Brown; but it surely would not be inconsistent with the dignity of that Board to put into the hands of others the weapons by which such attacks on the credit of vaccination may be successfully resisted. So important does it seem to us, that a volume bearing such a title as that we have now quoted, should be noticed, and its errors exposed and refuted, that we shall, in our criticism on this work, depart a little from the mode usually followed on like occasions. We shall take the present opportunity not merely of explaining to our readers the arguments which Mr. Brown puts forth in support of his position, but we shall narrate circumstances which will enable them to judge how far Mr. Brown is competent or not to adjudicate on the merits of vaccination.

Mr. Brown, who now steps forward as the uncompromising opponent of vaccination, is the same person who, in 1809, while a practising surgeon at Musselburgh (a fishing village near Edinburgh), headed the first regular attack on the Jennerian discovery: for the absurdities of Dr. Moseley were too

glaring and too contemptible to merit notice. The statements of Mr. Brown, however, had a certain foundation in nature. His inferences were overstrained, but his facts were, in many instances, correctly stated. Notwithstanding his objections to vaccination, we learn that Mr. Brown continued for many years, subsequent to 1809, to practise it. Since the year 1835, when he gave up practice, he has continued firm to his original text—the defects of vaccination, and now openly avows his belief (page 12), “that the practice of vaccination is full of inconsistencies, contradictions, and imperfections; and, unless it be improved, is unworthy of further confidence.” Mr. Brown is well-stricken in years. He was in practice 52 years ago, and, between the years 1790 and 1800, had inoculated about 1200 cases. He retains a strong predilection in favour of inoculation, and would fain see the world revert to that practice. But it is time that we lay before our readers a sketch of those alleged defects of vaccination which seem so formidable in the eyes of Mr. Brown, and which induce him to recommend a return to the practice of inoculation.

The great, and indeed we may say the sole, defect of vaccination in the eyes of Mr. Brown is, that the security afforded by it is imperfect and temporary. To be worth any thing, according to Mr. Brown, the preservative power must be absolute and permanent. He will admit of no compromise. *Aut Cæsar aut nullus* is his maxim. Con-vict vaccination of failing in certain cases to afford this absolute and permanent security, and forthwith it should be abandoned. Mr. Brown enters into some details concerning the proportion of the vaccinated who, in after life, yield to the small-pox contagion, and he comes to the conclusion (p. 73) that “above one-half of the vaccinated

\* An Investigation of the present Unsatisfactory and Defective State of Vaccination, and the several Expedients proposed for removing the now-acknowledged Defects of the Jennerian Practice. By Thomas Brown. 1842.

cases have already so yielded." He then adds, "when we consider that vaccination has not yet been proved by above one-half of the period of human life, it does not seem asserting too much to say, that unless some expedient can be contrived to render the anti-variola powers more complete, the whole, or nearly so, of the vaccinated cases may suffer an attack of small-pox, and this not of the safest and mildest, but of the most severe and fatal nature."

This, to be sure, is a sad picture of vaccine defalcation, and, if it were a faithful picture, we suspect that the eloquence of Mr. Brown would not have been needed to uproot the practice of vaccination. The common sense of mankind would have taught them the futility of the Jennerian practice, which, under such circumstances, would either have silently languished, or been authoritatively put down. The force of this argument is wholly lost upon Mr. Brown. He acknowledges, with some surprise to be sure (page 72), that the withdrawal of public confidence in vaccination "has been delayed longer than he expected," but he does not, or will not, see that this very delay should have suggested doubts as to the correctness of his data. Ample time has been given. Forty-four years have elapsed since the discovery of vaccination. Forty years after its general adoption in this country, the united voice of the empire, in Parliament assembled, declared itself so perfectly satisfied with the amount of the security that vaccination gives, that the inoculation of small-pox was declared illegal, the practice of vaccination throughout England and Ireland was placed under the direct control of the Government, and a tax levied for its support and encouragement. One would have imagined that this must have opened the eyes of the most bigoted. No! Mr. Brown declares

the Vaccination Extension Bill of 1840 to be "a disgrace to the profession in all its features." He still adheres to his early impressions. Vaccination is not what it was first represented to be—a complete, certain, uniform, unvarying, permanent security against small-pox. It has not banished small-pox from among us, as we were fondly told it would undoubtedly do; therefore, *delenda est Carthago*:—Vaccination must be abolished, and inoculation again encouraged.

Mr. Brown's error consists in his fixed determination to view only one side of the picture. He is an advocate pleading in the cause, "Inoculation *versus* Vaccination"—a prophet anxious to make good his own predictions, but he is no judge balancing nicely the arguments *pro* and *con.*, and arriving at length at a carefully drawn and practical conclusion.

That the merits of vaccination were largely overrated at the outset of its career, by Jenner and his followers, must be admitted. They undertook to prognosticate what would be the effects of vaccination under every possible contingency of age, time, climate, and constitution. They boldly announced its power of banishing small-pox from the earth, before it had even reached tropical countries, and ere a single black child had been vaccinated. They spoke of absolute and permanent security extending through the whole period of man's life, before vaccination had been known two years. This confidence of tone and manner had a wonderful influence on the early history of vaccination. It gave a powerful stimulus to the exertions of its friends and supporters, and materially assisted in fostering that rapid growth in public esteem, which is the great feature distinguishing vaccination from inoculation. How far its career would have been affected by a more cautious and

philosophical announcement of probable results is a mere matter of conjecture. We apprehend that, in such a case, its early progress in public favour would have been much slower; but still, like inoculation, it would have advanced steadily, until, at the present period, the actual condition of the world with reference to vaccination would have been much as we actually find it.

That absolute and permanent security, for the possession of which the early vaccinators so loudly vaunted vaccination, and for the want of which Mr. Brown now as loudly accuses it, is not expected by the world at large. They know too well the admixture of good and evil in the affairs of the world to anticipate such a result. They know that the storm and the lightning which clear the air root up forests and engulf ships. To come nearer home, they know that an income tax, with all its manifold public advantages, must be productive of partial injury and local dissatisfaction; but on a balance of the account, the world is satisfied with the quantum of benefit still standing to the credit of vaccination. One swallow does not make a summer; neither do one, two, nor three hundred cases of small-pox succeeding to vaccination withdraw from the public mind its confidence in vaccination, provided that one, two, or more thousand remain secure, and the total amount of deaths and injury to eye and constitution inflicted by small-pox falls short of what it did in the days of our fathers. We recommend to Mr. Brown the study of statistics. The cleverest reasoning fades before the dispassionate results of figures in long columns. Small-pox exists, but it exists shorn of many of its worst features; and when it does invade the vaccinated, it is no longer the direful disease which our ancestors knew, and so justly dreaded.

While we thus blame Mr. Brown for the one-sided picture of vaccination which he gives, we do not on the other conceal from ourselves the injury done to a good cause by persisting in those confident announcements of the complete and permanent security afforded by it, which we still occasionally meet with in high quarters. It is quite idle at this time of day to indulge in such vain boastings. Small-pox occurring after vaccination has its pathological characters as clearly defined as small-pox in the unprotected. We hope, therefore, that in future it will not be thought necessary for the upholding of vaccination to over-estimate its merit, or to overlook its defects.

In the observations now made we have reasoned with Mr. Brown more calmly than his own tone would strictly warrant us in doing. We have done so because we would not detract from the merit which really belongs to him. Mr. Brown was the first who publicly announced that the brilliant anticipations of Jenner were too highly coloured, and that a certain proportion of the vaccinated would imbibe the contagion of small-pox in after-life. Had he remained satisfied with this advance in vaccine pathology, still more if he had set himself diligently to investigate the actual amount of vaccine imperfection, he would have earned for himself an enviable notoriety. By overstating his case—by using unnecessary violence of language—by arguing in the worst spirit of prejudice—he has forfeited all claim to the character of a pathologist, and must rank with the Mosleys and Birches of the profession. We must treat our readers with some choice specimens of Mr. Brown's efforts as an improver of medical science.

At page 4 he tells us, "that if varicellous inoculation had been made imperative upon the whole population, not only would the present dilemma have been avoided, but the only probable

and possible way of resisting the ravages, and even extinguishing the existence, of contagious small-pox, would have been the result." Small-pox extinguished by inoculation! As the sentence stands it is absolute nonsense. Perhaps, the author meant to say that inoculation universally practised would have banished epidemic visitations of small-pox. If so, he took a strange way of enunciating his proposition. But how this principle of universal and imperative inoculation could have been carried out puzzles us, for we learn, at page 60, that "if inoculation is performed on the young, enfeebled, and exhausted, the disease will be uniformly either severe, dangerous, or fatal."

Mr. Brown's practical hints concerning inoculation, and still more concerning vaccination, are too singular to be passed over in silence. He says, that while all measures are to be pursued calculated to render variolous inoculation mild, "the opposite plan should be adopted in regard to vaccination, and every means used to make the phenomena of the vaccinated spot as severe as possible." And how do our readers suppose that this is to be effected? To secure this most important object, says Mr. Brown (at p. 61), the virus should be allowed to become a little dried or viscid upon the lancet before it is inserted in the arm! Besides which, the vaccinated spot should be kept hot, and a slight irritation excited by temporary pressure! Such is Mr. Brown's mode of improving the practice of vaccination.

Mr. Brown propounds, at page 63, the strange notion, "that cases of small-pox succeeding to vaccination have been in general confined to the lower classes of society." We feel satisfied that this is a complete error. The upper classes have always had their fair share of the defects as well as of the benefits of vaccination. We

notice this error of Mr. Brown's the more willingly, because he couples it with a recommendation in which we perfectly coincide. "Nothing can be a greater error," says he, "than the taking vaccinated children under ten years of age away from an epidemic small-pox, for, if they are to have it, they would then receive the contagion while the influence of the previous vaccination over the constitution is yet capable of mitigating the disease; whereas, later in life, when engaged in all the duties of social life, they may be attacked with small-pox, when the influence of the vaccine is either diminished or exhausted." The good sense of these few lines will atone for much of the accompanying absurdity.

Mr. Brown takes up in succession the several modes which have been proposed for improving the practice of vaccination, and fortifying the public mind in its behalf. It is hardly necessary to say that he finds fault with all of them. He begins with revaccination; but having made up his mind that primary vaccination, with its more decided results, affords only a partial, feeble, uncertain, and temporary security, it is hardly to be wondered at that revaccination, with its imperfect phenomena, should be declared "unworthy the confidence of any reasonable being." He proceeds to the consideration of retro-vaccination, or the method of increasing the intensity of the vaccine virus by passing it again through the body of the cow. This, in the onset, without any inquiry into the facts, Mr. Brown at once sets down "as the most unsatisfactory, unphilosophical, and unworthy expedient that could possibly be contrived, carrying inconsistency and contradiction on its very face. He has no hesitation in declaring, without laying claim to any experience in such an expedient, that it is only sporting with the good sense

and safety of the public, and will be found a ridiculous source of further confidence." These are hard words, but they are nothing more. M. Bousquet has a beautiful series of drawings, showing the difference in the progress of the long-humanized vaccine virus, and the same virus improved in its activity by the process of retro-vaccination. The results are very striking, and no one, who has enjoyed the advantages of study at the *École de Médecine*, but must be sensible of the remarkable power which this expedient possesses. All this, however, goes for nothing with Mr. Brown.

It fares no better with Mr. Ceely and the new variolo-vaccine virus; or rather, we ought to say, Mr. Brown is more inveterate against Mr. Ceely than even against Dr. Jenner. His experiments on the inoculation of cows with the matter of human variola, are declared to be unpleasant and disgusting, because he made use of the mucous membrane of the vulva, instead of the cellular membrane of the mamma! Mr. Brown however, in this part of the argument, impales himself on the horns of a dreadful dilemma. He declares that the variolo-vaccine, or the virus obtained by inoculating the cow with small-pox, can be none other than small-pox. Yet in the same breath he inveighs against the use of this very matter, and counsels a return to the practice of inoculation!

We have now completed the task which we proposed to ourselves. Our readers must by this time be sensible what sort of claim Mr. Brown can set up for the office of judge in the great question of vaccine security. We think that on this point there is not much room for difference of opinion. Mr. Brown has neither the temper nor the judgment that can qualify him for the task. He has not investigated the facts deeply, nor reasoned upon them with

fairness. His sole object is to disparage vaccination, and to cry up the advantages of inoculation. We do not join with those who take delight in depreciating a practice which saved the lives of our fathers and grandfathers, and which was steadily advancing in public favour when the practice of vaccination superseded it. We are fully sensible of the value of inoculation, and think Lady Mary Wortley Montagu a great benefactor to her country; but we are equally convinced that the practice of vaccination is a great improvement upon it, and that those who live in the nineteenth century have no cause to grumble at the alleged advantages which their predecessors of the eighteenth enjoyed in respect of an exemption from small-pox.

#### ON THE DIVISION OF MEDICAL LABOUR.

By ROBERT HULL, M.D.

(For the *London Medical Gazette*.)

##### *The Apothecary.*

WE live in days when the inconsistency of the human mind displays itself in flagrant characters. When men adopt the levelling principle, yet foster individual vanity—talk of republican equality, yet personally are as despotic as possible.

This has been enough manifested on the great and political arena. Reformers, deadly hostile to the aristocracy, yet aiming with eagerness at distinction: levellers, hating "the word gentleman," yet givers and takers of hereditary titles, with an hilarity truly ridiculous: the men of the people, the first moment is offered to them an everlasting separation from the people, jumping at the coronet or the sirship!

But this inconsistency is only apparent. Your levellers only level from above downward, down to themselves.

In our own profession, the reforming mania has been displayed; but the reformers are, almost all, men who are envious of superiors; who think them-

*Under the wider allusion to the  
"advancing which was..."*



selves worthy of the eminence, from whence they would detrude less worthy occupants—witlings who wonder at their professional obscurity; but content themselves with

“Full many a flower is born to blush unseen.”

When the hapless Sir H. C. lost a regal parturient, there was not in the empire a man-midwife who did not drop a hint that, had *he* been engaged, matters would have had a different termination. *He* had never lost a patient in midwifery! and the petty arena of every petty boaster resounded with lamentation that a man so “clever with women” as Mr. Dawson or Dobson, Jackson or Jobson, had been concealed in Cornwall or Devon, when he might have been salvatory to a princess and a nation. The court apothecary often knows more than the court physician. “Sir Jacob had the management; *but* her Royal Highness would have been alive to this day, had *I* been the adviser.”

There are, most certainly, in all human institutions, just enough of pegs of abuse whereon to hang vituperation. No clamour for reform but has some foundation; so imperfect is everything mundane. But the professional misery has been asserted, not by sufferers but by agitators. The Royal Colleges of Physicians, and of Surgeons, have had their share of virulent contumely. Yet we see men, who had been most opponent “on principle,” quickly swallowing the sop, and receiving the Fellowship or the Councilship, which a Roman sternness should have animated them to spurn.

The College of Physicians, as a licensing body, have been very much disliked. But surely the Government is as much at liberty to protect, as it chooses, the lieges from bad physicians as from bad lawyers or divines. The licences of the College have been demanded too sparingly rather than arbitrarily. How many men are practising in London without permission! what thousands in the provinces of Wales and England! the College quiet.

The pedants of that body, we are told, declined to give Jenner “their licence to practise in London; alleging, in excuse, his *proper* refusal to undergo examination in Greek and Latin.”

He who underrates those learned

tongues and the golden treasury they unlock, will provoke no antagonist to a reply. He who thinks that the discovery of the protective influence of cowpocks, *per se* and imperiously, gives a claim to the highest medical rank, forms a singular judgment of “the physician.”

The respect paid the profession in England is alone due to the high grounds successfully maintained, through successive reigns, by the College. Men of the old universities have boasted an education, in the same groves of Academus, with the peers and the aristocrats of the land. In active and after life they have maintained a proportional deference and position for themselves and their profession: and titles, opulence, and power, have been levelled in the republic of letters and of medical *lore*.

The dethronement, so to speak, of the Royal College, will be the signal of the degradation of our common profession.

The College may not have been, in former times, sufficiently pliable; it is so now. The modern admissions, without degrees academic, to the licence, places the College beyond cavil.

Individuals may still feel aggrieved; what mundane institution is perfect? Men of middle age, with foreign degrees, with general acquirements, may fancy there is humiliation, if they submit to an examination for the Collegiate licence. This would not prove the licence needless. The College aims at the practical physician; for him *alone* it was formed, for him exists. It is a thorough manly, English body.

Men may be very adept in the auxiliary sciences—great chemists, comparative anatomists, boundless natural historians—yet impotent in the art of healing.

Against this royal and other collegiate bodies, which constitute physicians, and, indeed, against the pure physician himself, the agitators have endeavoured to array the apothecaries. Persuading these gentlemen that, as they are equal in knowledge, they should not be inferior in rank. Too many have listened. Doubtless the apothecaries are a most worthy well-trained class. This is due to the calumniated Hall, which, whatever its errors, means well; and has, I verily

believe, done more good to the lieges than any other modern institution. And among these practisers, assuredly, many, very many, are to be found, who, for skill, philosophy, acquirements, are comparable with the most accomplished physicians.

Individuals will always exist essentially superior to their grades. Many private men are more strategic than commanders. Many clerks more jurisprudent than the heads of the firm. Many laymen more theologous than their parsons.

But, on the whole, society is best furnished with workmen, through varieties of labour, of rank, of pay.

The apothecaries, *on the whole*, cannot be supposed to equal the doctors of physic. They have not generally so complete an education. But if they had, the tumult, the hurry, the conflicting calls, the incessant occupation of practice, must prevent equal observation, equal study and improvement.

Of two persons, similarly endowed with capacity, with acquisitions, with ardour, one starting in practice as a physician, the other as an apothecary, the physician must get a-head, through pure advantage of leisure and repose.

The attempts of agitators to disrupt the harmony of these classes of practisers, should be opposed by all sober men. The apothecary should imitate the more ancient models; not the upstarts of reform. The physician should be scouted who invades the district of the apothecary. If he keep a surgery or a shop, he ought to be rumped without commiseration.

This segregation, so needful for the dignity and efficiency of the physician, must, I believe, depend solely on union of the body of physicians among themselves.

It is to be feared that the pharmaciens will not maintain the division of medical labour. I have known, on a large scale, the apothecaries sanctioning irregular practice in the physician, on the simple plea of interest. Loth, by refusal of a meeting, to let slip their patients; confessing their approval of our divisions, allowing that irregularity ought to be opposed, but lamenting, in the same breath, that they cannot afford to be high-minded. And this, not by the needy alone, but by opulent, carriage-keeping apothecaries, whose pusilla-

nimity keeps pace with their golden accumulation.

It would be easy to convince the money-loving pharmaceutic that his true policy is to stick to the rigid rules. He, by the usages of the whole country, may easily obtain his remuneration, by charging for his physic. Even the fee of the physician he greatly surpasses. His visits are numerous, close on each other; each succeeded by varying and costly drugs. What is his position if he defies the physician, drives him to his own resources, and makes him a rival, who should be a consultant? Will the patients of Mr. Higginbottom, or Mr. Pugsley, continue to pay their bills for physic, always deemed exorbitant, always suspected to be needless, if the physician near them should attend for a diminished fee, with little prescription of drugs? When, in fact, it will be cheapest to employ the graduate, and less nauseating. To this the apothecaries will drive the physicians, if the war continues. It is for the respectability of the graduates in England not to imitate the example of low fees, already set them in Dublin and Liverpool. It is for the interest of the apothecaries not to compel them; but to restore harmony—to cease from depreciation—to be friendly, if they are wise.

“σμερὰς ἀπ’ ἀρχῆς νεῖκος ἀνθρώποις μέγα γλῶσσ’ ἐκπαρξεί τοῦτο οἱ σοφοὶ ἐροῦν ἐξυλασθῆνται, μὴ φίλοις τεύχειν ἔινω.”

The race of pure apothecaries is nearly extinct; most of them are members of the College of Surgeons; all of them call themselves by this name. Be it so: this only renders more needful the distinct physicians. For what is the chance of maintaining the science of medicine, if it be left solely to general practitioners, who, however philosophic, are as busy, most of them, as the devil in a gale of wind? Where their leisure for original cogitation? where their midnight oil? Nor need these gentlemen give credit to the agitators that they are unduly disrespected. The members of the College of Surgeons, who are apothecaries, but keep no retail shop, are, as a body, too elevated in society to justify such sentiments. The major includes the minor. The surgeon swallows up the pharmacopole. Besides, as a body, they are richer than the graduates, over and over again. Let them not join in the

silly charge and calumny against physicians, that these

“ φρονόσι δήμου μείζον, ὄντες οὐδένας ;”

nor be gulled by the flattery of injudicious friends, who would persuade them that

“ οἱ δὲ αὐτῶν μυρῶ σοφώτεροι.  
εἰ τόλμα προσγένοιτο βούλησις θ' ἅμα.”

I believe that the Hall is quite disposed to protect them in their legal privileges, as well as the community to respect their great utility. But they must inform, they must complain, if they are injured or passed over.

At this moment lies before me a country paper, with the advertisement of a pedagogue turned apothecary. Let the gentlemen in his neighbourhood report him to the Hall! The whole affair is so barefaced, that they may reckon on instantaneous measures being taken by this beneficial body.

The practice of the druggists might easily be suppressed, at least restrained, if their complainants will but take the trouble to obtain the sufficient evidence.

The laws of this country are all in favour of the English apothecaries. Let them assert their claims. At present the laws know not any physician, who is not a licentiate of the Royal College. The College is passive, but the laws are express. The members of the Apothecaries' Hall are endowed with privileges superior to any other medicinal doctors. *Take the right of inspecting LUNATIC ASYLUMS.*

This appointment is expressly reserved for the members of our English institutions. The act of parliament (2 & 3 Geo. 4, c. 107) declares that the medical inspector must be a licentiate of the Royal College of Physicians, or of the Apothecaries' Hall, or a member of the College of Surgeons. This enactment would seem to have escaped the magistrates, at sessions, where they appoint their lunatic inspectors; and if the Colleges and Hall fail in their duty, which would seem to be the conveyance to the magistrates of counties and of towns, of the needful information, let the neglected apothecaries stir up their minds by way of remembrance. Let them demonstrate to the justices that, when they appoint any but *English* physicians, *English* surgeons, or *English* apothecaries—however intelligent the possessor of a Scotch or other degree may be—they violate

an act of parliament, which embraces in its provision every LUNATIC ASYLUM THROUGHOUT ENGLAND AND WALES.

## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

March 22, 1842.

### THE PRESIDENT IN THE CHAIR.

*Cases of Perforation of the Stomach, of the Duodenum, and of the Bronchial Tube.*  
By WILLIAM BAINBRIDGE, Esq., Upper Tooting.

THE author observes that, as these cases are inevitably fatal, they present no feature of practical interest beyond the mere necessity of being acquainted with the circumstance of their occasional occurrence, so as to be able to distinguish the event, and give a correct prognosis.

Two cases are related of perforation of the stomach; the first occurred in a woman, æt. 60, of spare habits and sallow complexion, who, with the exception of vague symptoms of dyspepsia, felt pretty well until the evening of Sept. 26th, when, after having taken supper, she was seized with pain at the pit of the stomach, with fulness and oppression. These symptoms rapidly increased, attended with great anxiety and enormous distension of the belly. Active purgatives by the mouth, and turpentine clysters, were administered; the tube of the stomach-pump was also introduced to favour the escape of pus, but she sank on the 29th, apparently exhausted by a violent diarrhoea.

On examination after death, the whole of the peritoneum was found entirely red, with deposits of lymph and pus glueing together the intestines. The left lobe of the liver adhered to the anterior wall of the stomach: on separating this, there appeared a small circular orifice in the centre of the stomach, through which oozed its contents. In the anterior of the organ, corresponding to this opening, was a circular ulcer, with raised and indurated edges, surrounded with redness, but no softening of the membrane.

The second case was that of a healthy-looking girl, æt. 18, who was seized with a sense of sickness shortly after eating a hearty breakfast. Decided symptoms of peritoneal inflammation shortly supervened, such as vomiting, hiccup, tension, tenderness, and swelling of the abdomen; quick and thrilling pulse; cold and clammy perspiration: the vomiting continued incessant until her death, which took place in 24 hours. It is stated, that for two or three weeks previous to this attack, she had felt well, with the exception of a little pain at her epigastrium and between the shoulders.

**Examination after death.**—Effusion of serum into the peritoneal cavity; the intestines glued together by lymph and pus; a perforation, the size of a pea, in the anterior wall of the stomach; interiorly, corresponding to this, a round ulcer, with hardened and elevated edges.

In the two cases of perforation of the duodenum, the symptoms came on almost immediately after having taken a hearty meal; they were those of acute peritonitis.

On examination after death, besides effusion of serum into the peritoneal cavity, and deposits of lymph and pus, there was a rupture of the posterior part of the duodenum; in one instance to the extent of two, and in the other of three inches: the mucous membrane of this intestine was very soft, in one case a mere pulp.

One of these patients had previously suffered only from vague symptoms of dyspepsia, and the other was in perfect health up to the period of the attack.

The author observes that there must be a singular proneness in the upper part of the anterior wall of the stomach to this kind of ulceration, for in these two cases, and others which he has read, as well as in six specimens examined at Guy's Hospital, the ulcer was situated in very nearly the same spot.

With respect to the rupture of the duodenum, he refers to the work of Dr. Hodgkin on the Mucous Membranes, who states that the portion of the duodenum called the "pyloric valvule," is peculiarly prone to disease, and often very lacerable. In six cases of malignant scarlet fever which the author examined last year, he found this portion of the intestine intensely red, the remainder of the intestinal canal being healthy.

The symptoms after perforation the author states to be a severe pain at the epigastrium, or right hypochondrium, succeeded by the general symptoms of peritonitis. He, however, considers the extreme anxiety and distress of the patient's countenance as more pathognomonic of the occurrence than the vomiting or state of the pulse.

The President remarked on the peculiar character which the disease presented, in that the mucous membrane might be so considerably diseased without any signs of disorder, and that severe symptoms did not ensue till the peritoneal coat was destroyed. He observed that it seemed a general character of the diseases of certain mucous membranes that they were not accompanied by any very sensible signs of disorder, and detailed the case of a lad who was received into St. Thomas's Hospital after having swallowed a quantity of strong acid, and who was discharged ten days afterwards to all appearance well, but died three days

subsequently, and, as he supposed, from perforation of the peritoneum. He mentioned also two cases of rupture of the duodenum: one was in a young lady who had been previously in excellent health; but in raising her arm high up one day, felt something give way in the abdomen, and soon after died with a rupture of the duodenum, which in the neighbourhood was much softened. The other case was similar in its results, but differed in having been all along its course attended with acute dyspeptic symptoms.

Dr. Elliotson mentioned a case in which, contrary to the general course, the pain produced by perforation of the stomach ceased for several hours before death.

Mr. Bransby Cooper coincided with the President as to the peculiarity of the absence of symptoms of disease while the mucous membrane only was affected, and their severity when the peritoneal was attacked.

Mr. Probert related two cases in which death occurred in persons who to all appearance had shortly before been in perfect health, from perforating ulcers of the stomach. In one of these the ulceration of the stomach had evidently been for a long time plugged up by a portion of omentum, which adhered to it, and which had by some accidental circumstance given way, and permitted the escape of the contents.

Mr. Curling alluded to the occurrence of ulceration of the duodenum in connection with extensive burns, especially of the abdominal parietes, as having, perhaps, some relation to the cases mentioned in the paper of excessive redness of the mucous membrane of the duodenum in scarlet fever. In two cases that he had himself seen, death took place in consequence of the perforation of the duodenum by an ulcer after a burn, and he knew of a sufficient number of similar cases to render it certain that there was some connection between the injury and the intestinal affection.

Mr. Lloyd detailed three remarkable cases of abscesses communicating with the cavity of the stomach, and two in which foreign bodies in the appendix vermiformis had proved fatal by ulceration into the peritoneal cavity.

Dr. Addison pointed out the chronic character of the perforating ulcers as peculiarly worthy of notice. This was especially characterized by the thickening of the borders, which he had in one case seen amount to a full inch. Another remarkable fact was, that these ulcers did not give rise to hemorrhage. The disease seemed to be accompanied by such an effusion of albuminous substance in the neighbourhood of the ulcer, as was sufficient to close the blood-vessels which would otherwise be opened. The superficial ulceration of the stomach, on the contrary,

was frequently accompanied by hemorrhage. It was worthy of observation also that the disease occurred with peculiar frequency in young women, and he thought it might be connected with those signs of gastric disturbance to which it was well known they were subject when not regularly menstruating. He suggested it as a subject of interesting inquiry to determine whether there were any thing in the structure or the functions of the different parts of the stomach which would account for the fact that the lesser arch and its neighbourhood were almost invariably the seat of these perforating ulcers.

Mr. Paget mentioned four cases in which fatal hemorrhage had ensued from chronic ulcers of the stomach spreading to and opening large blood-vessels, and described the peculiar character by which this form of ulceration might always be distinguished from all others. Of five cases which he had recently examined, only one had occurred in a young female: and he said that the result of the comparison of nearly a hundred cases which had been collected by the professor of morbid anatomy at Vienna, had proved that, though the disease was more common in women than in men, and more common in young women than in those of other ages, the disproportion was not so great as was commonly supposed. He mentioned a case similar to Mr. Curling's, where fatal ulceration of the duodenum had taken place after a burn, and two others of chronic perforating ulcer of the duodenum; in one of which there was such a coincidence of hernia as led to the supposition that the patient was suffering from strangulation of the intestine.

Mr. Hawkins related a case in which he had found a well-marked cicatrix of an ulcer in the stomach.

Dr. Elliotson said that, according to his experience, the disease occurred almost exclusively in young women. He did not think there was any character by which its premonitory signs could be distinguished from those of ordinary chronic gastritis.

Dr. Kingston related a case of perforation by an ulcer of the duodenum which proved rapidly fatal.

Mr. Hilton asked if the cases of hemorrhage into the stomach, mentioned by Mr. Paget, were not the consequences of disease of the arteries themselves: such cases had occurred at Guy's Hospital. He could not understand how a large aperture could occur in the peritoneal coat unless the stomach had been previously adherent to the opposite surface of the peritoneum, and then suddenly separated from it; and that this did occur was rendered probable by the frequent existence of a spot on the peritoneum corresponding to the aperture in the stomach.

Mr. Paget said in the cases he had mentioned there was every character of chronic ulceration of the stomach spreading to the blood-vessels. He believed that the aperture in the peritoneum was always formed by sloughing. The ulcer spread slowly through the tissues till it came to the peritoneum, which then sloughed, and at last gave way. Such a slough of the peritoneum might not unfrequently be seen in the form of a thin opaque white membrane adhering to a part of the margin of the aperture. He added that he had seen two cases of cicatrices of chronic ulcers in the stomach, similar to those mentioned by Mr. Hawkins.

The President alluded to the case of M. Beclard as one of the same kind, and said that he hoped Mr. Curling would present the society with some account of his cases of ulceration of the duodenum in connection with burns.

The next meeting of the Society will be on the 12th of April.

## CASES OF HERNIA,

TREATED AT THE ST. MARYLEBONE INFIRMARY: WITH CLINICAL REMARKS.

By B. PHILLIPS, Esq. F.R.S.

THERE is no subject connected with the practice of surgery which has been more carefully studied than hernia; but the variety which these diseases present is so great, that the matter is far from being exhausted.

I wish to call attention to two cases of hernia lately under treatment, which presented peculiarities worthy of serious attention.

A woman, aged 62, was admitted to the infirmary with a tumor in the right crural region. She had great abdominal tenderness, and some nausea. She stated that this tumor had existed for some years; that she had supported it with a truss, and that it had never occasioned her much inconvenience. Her bowels had been irregular in their action for some time; and they had not been relieved at all since the previous Monday, a period of four days. When the tumor was examined, it was rather tense, irregular, and tender; the abdomen was tumid, and painful on pressure; the pulse was quick; the tongue was dryish and coated; and there was occasional vomiting of a suspicious character. When I saw her she had had two purgative and one turpentine clyster; but they brought away with them no fecal matter. Under these circumstances—the tumor being large, and of long standing, and the symptoms not very pressing—I directed that cold applications should be made to the tumor, and that she should take at intervals of three hours the following dose:—



**Ex. Coloc. Comp. gr. iij. ; Ol. Carui, gtt. ss.**

After twelve hours the following enema to be administered :—

**Ol. Ricini. Ol. Tereb. aa. ʒvj. ; Liquor. Potassæ, ʒiss. Beef-tea, ʒviij.**

The bowels were not moved by the pills ; but the injection brought away with it a large quantity of fecal matter, which was followed during the next twelve hours by two more evacuations. The symptoms of strangulation gradually abated ; the tumor in the course of the succeeding day was much lessened. During the next 48 hours there was increase of peritoneal tenderness, some fever, and no evacuation. Similar means to those previously used were again had recourse to, and with success ; but these troubles recurred again and again during the following ten days, but ultimately gave way, and the patient was discharged cured.

Mary Brown, aged 60, was admitted into the St. Marylebone Infirmary on Monday, Dec. the 6th. She complained of nausea, pain over the abdomen, and a tumor in the right groin. She was immediately seen by the resident physician, who ordered a purgative enema, cold lotion to the tumor, and turpentine fomentation to the abdominal surface.

At three o'clock I saw the patient, and found her with a moist clean tongue, a quiet pulse, some little nausea, and no great abdominal tenderness, though there was some tympanitis. The purgative enema had returned, but it brought no fecal matter with it.

She stated that the tumor in the groin had existed for many months, but had occasioned her very little inconvenience ; that the tenderness was perceived on Saturday ; that it had continued to increase, though slowly, and that it was accompanied by slight nausea. She stated farther, that the bowels had not been relieved since Thursday. The symptoms being so little pressing, and no means besides the purgative enema having been used to procure an alvine evacuation, the following means were ordered to be used :—

**R Ext. Coloc. Comp. gr. iv. ; Ol. Carui, gtt. ss. 4tis horis.**

And if the bowels were not affected by six o'clock on the succeeding morning, the following enema to be used :—

**Ol. Ricini, Ol. Tereb. aa. ʒiv. ; Liquor. Potassæ, ʒj. Beef-tea, ʒxj.**

On the succeeding morning, between three and four o'clock, after having taken four pills, she had an extremely copious offensive stool, of very unequal consistency. Spite of this the enema was administered at six, and was retained.

At one o'clock on the 7th she was again seen by me. The nausea had somewhat

increased, the tongue was less moist, and the pulse, though a little more frequent, had somewhat lessened in power. The abdomen did not appear more tense or more tender on pressure, and the size of tumor was lessened. She was ordered to have beef-tea in small quantities, and two drachms of brandy every two hours, under the careful supervision of the resident physician, and to continue the turpentine fomentations. I also directed that if any of her symptoms became more urgent I might be sent for.

She appeared comfortable when seen at seven o'clock, and continued so until nine, when she felt more sickness, and some stercoraceous vomiting occurred, accompanied by great depression. The resident physician ordered her to have ether mixture every two hours, and to have a mustard plaster to the abdomen. At twelve o'clock P.M. I was sent for : I found her still sick and very low. I ordered her some warm brandy and water, and determined to ascertain whether, in spite of the copious stool, a portion of intestine might be found in the sac. Upon cutting through the integuments and superficial fascia, a tumor was found very like a tumid congested gland : there was not the slightest vestige of sac around it ; neither was there any intestine under it. This knuckle of omentum, for so it was, was firmly adherent to the adjacent tissues over its whole extent. Under those circumstances the ring was enlarged, and the parts brought together. She never rallied, and died in the course of the morning.

She was examined thirty-six hours after death. The abdomen was still tympanitic ; the intestines inflated with gaseous fluid ; and there was a certain quantity of diffuse peritonitis, affecting mainly the surface of the large intestines. The inguinal region was carefully examined, and a portion of the omentum was found in the condition already described. By the side of this omentum there was no channel sufficiently large to allow of the descent of the intestine ; but just at the neck of the sac there was a cul-de-sac about half an inch long, in which a portion of the cylinder of the ileum was found concealed, and to which it adhered so closely, that when it was gently pulled it gave way at a very small point, and fecal matter escaped. Although at this point there was no sensible contraction at the diameter of the intestine, and although the inflammatory action did not extend beyond a third of its circumference, there was an appearance which might lead to a belief that some obstacle to the passage of the fecal matter had long existed there. For about an inch from the point, the intestine formed a pouch as large as the finger of an ordinary glove, and full an inch long.

Whether such an affection of a small por-

tion of the diameter of the intestine be enough to prevent the peristaltic action at the point, and thus to cause an accumulation of fecal matter, is a point of much interest, but not easily determined. The existence of the diverticulum would lead to the belief that the obstacle, such as it was, had long existed, and that the action of the intestine had been directed to force a new passage.

In Mr. Henry Gibson's case, the patient, a boy of fourteen, had vomiting, pain, and hiccup; great tension, but no stools. He rejected purgatives as soon as he took them. The clysters came away without fecal matter. A suppository made of a small candle rolled in soft soap and salts was introduced, and in a quarter of an hour there was a copious discharge of feces, without abating the vomiting, hiccup, or pain. The parents objected to operation, and the boy died.

The abdomen was opened. The small intestines were found scarcely discernibly inflamed, and the large ones not at all. We discovered an "appendicula," dependent from the ileon, of the size and form of the little finger of an adult's glove: this was about two inches or more from the small portion of the intestine concerned in the strangulation, which small part was nothing more than a shallow sinus or cavity of intestine, as if forming another appendicle, and was the only part of the intestine involved in the hernial sac.

In Mr. Else's case the whole circumference of gut was not included. In Mr. B. Cooper's case there was a similar state of things.

The second case I have related possesses several points of interest. In the first place, it shows, like its predecessor, the inutility, to say the least of it, of using drastic purgative injections. It seems to me, by exciting additional irritation, if they arrive at the strangulated point, they are well calculated to increase the evil, and that in a large number of cases they totally fail in producing an evacuation. I have seen great evils to follow their administration in cases of malignant or other contractions of the gut. Frequent emollient injections are much more likely to break down hardened matter than a single drastic purgative one; and supposing the obstacle to be a malignant contraction, irritating substances cannot fail to increase the mischief. There are of course cases where irritants may be necessary in old or paralytic subjects. The injection I ordered in the preceding cases I have found very effective, and I believe it excites very little irritation.

This case also shows that the symptoms of strangulation in old people do not present the urgent character which they assume in younger people. If, therefore, constipation does not yield within a moderate space of time to ordinary means, it becomes necessary to operate for the relief of the gut, even though the symptoms of peritonitis be not urgent,

nor the feverish reaction considerable; because peritoneal mischief may go on insidiously, and, without manifesting much intensity, may destroy life. Still, where the hernia is old and irreducible, the ring is enlarged, and the chances of strangulation are not so great as when it is recent.

Another point of importance in the latter case is, that although a copious evacuation of the bowels occurred in a few hours after admission, and that without injection, it produced only a very slight remission of the symptoms at that time, and did not at all avert the progress towards a fatal termination.

Why the disease terminated fatally the post-mortem examination did not explain: the peritonitis was slight: it was not accompanied by any effusion; and it was very limited in extent. The gut was perfectly pervious: it did not seem that more than a third of its calibre had been in any way involved in the protrusion; and that point, not larger than a shilling, was only softened and adherent; and there was no apparent obstacle to the passage of fecal matter.

It must be borne in mind, that after symptoms of strangulation are fully developed, a clyster may bring away a large stool without giving decided relief, as in the case before us, because the part protruded may be a portion of the ileum, and the injection may induce the large intestines to expel their contents. Recollect, then, that what is so much to be desired, a copious evacuation, must not throw us off our guard; unless it produces a decided remission of the symptoms, it will usually be without any good result upon the disease. But in this case the evacuation was obtained not by enemata, but by medicines introduced into the stomach, and passing through the whole length of the digestive tube. Here we had a right to expect benefit from the occurrence: and we can only account for her death by assuming that the shock given to her constitution before her admission was too great for an old woman in broken health to rally from.

In many of these cases the injury done to the intestine is so great, that, even though it be liberated early, some chronic inflammation is set up in it, and the patient ultimately dies. I presume that in the first case some such mischief had been sustained, because of the difficulty which was experienced in getting the bowels to act after the symptoms of strangulation had disappeared. Some months ago there was a case here in which the presumption in favour of this condition of the intestine was still stronger; for there was copious vomiting of fecal matter for nearly two days after the intestine was liberated by operation, yet the patient did well.

There is still one circumstance to which attention should be made—the exhibition of *Ex. Coloc. C.*, et *Ol. Carui*. It may be

called an irritating purge. All that can be said with respect to it is, that I have not found it so; but I have only used it in cases of old subjects. Two or three years ago I had a patient with strangulated femoral hernia. The symptoms were not very pressing. Castor oil was administered without effect by the mouth and rectum, but it produced no evacuation. Small doses of sulphate of magnesia were administered every hour. Stercoraceous vomiting came on, but the bowels were not relieved. I determined to operate; the patient refused to consent to it then, and said she would risk it till the next morning. I then ordered her Ex. Coloc. C. gr. iv., Ol. Carui, gtt. ss. 3tiis horis, which was regularly given her; and when I saw her the next morning the intestine had returned, and she had had a stool.

### INCOME TAX.

*To the Editor of the Medical Gazette.*

SIR,

I HOPE you will be able to find room for these few lines in your next GAZETTE, that they may meet the eye of some individual who may have the inclination and ability to be of service to the country practitioner.

The income tax of Sir Robert Peel has struck my brethren and myself with much alarm; for the natural inference has occurred forcibly to our minds, that if we have been scarcely able to keep the wolf from the door when we paid twelve pounds a year for taxes, how shall we do it when we have to pay twenty-four. We live as frugally as possible in-doors; but, unfortunately, we have an expense without which we cannot lessen—I mean the purchase and keep of a horse, which, to a surgeon attending a Union, I assure you frequently costs more than he gets for his contract. The farmer is allowed to keep a horse free of duty to go to market; surely the surgeon should be allowed the same privilege to visit the suffering poor. Perhaps this may be thought too trifling a lessening of his expenses; but I am sorry to say that, little as it would be, it would in many cases be highly valued. The expense of horse-flesh to a country surgeon is very great; it is not merely the purchase and keep of the animal, but the additional expense arising from casualties to which the horse is liable. If his own horse is lame or sick, he must hire another to visit the patients of the Union, and pay twice as much for the day as he receives for his trouble.

I am no politician, and know little of finance but what is taught me every Monday morning by my butcher and baker, and the close calculations of the Board of Commissioners; but I think Sir Robert Peel would have earned more laurels as a minister, if he had applied his scale to the in-

some tax as he has done to the corn duty; but, according to his present plan, it acts most unequally: the wealthy man may curtail his luxuries, the easy man his comforts, but the poor man must be deprived of his necessities.—I am, sir,

Your obedient servant,

A COUNTRY SURGEON.

### SPONTANEOUS GENERATION.

OUR readers may remember the excitement caused in the year 1837, by the announcement that Mr. Crosse, of Broomfield, had observed the development of certain insects incident to the long-continued action of voltaic pairs. Little additional information on this mysterious subject has since transpired until Tuesday, the 15th instant, when a paper from Mr. Weekes, of Sandwich, was read before the London Electrical Society, detailing the successful repetition of Mr. Crosse's experiments. Among the cavilling which arose in connexion with the original experiments, the possibility was urged that the ovæ of the insects might be in the air. Mr. Weekes's experiments were so conducted, that this objection can be scarcely tenable. A well-charred block of beech, containing a circular groove to receive a bell-glass, was the base of the instrument. The groove was filled with mercury. A tumbler, containing the solution of silicate of potass, was beneath the bell. The silica was obtained by subjecting to a furnace heat a piece of fine black flint obtained out of the centre of a "boulder," selected from amongst those lying on the shore at Sandwich. The silica was united to the potass by a furnace heat; the result quenched in boiling water. The solution was immediately covered, and filtered under cover. All things being prepared, the voltaic current was sent through the solution on the 3d of December, 1841; and from that date to the present time the apparatus has not been disturbed. At the end of October, 1841, the first insect was observed. On the 16th of November five were discovered. Since that date insects have been repeatedly seen. We must not omit to mention that the bell-glass was placed in total darkness, the screen being only removed when the progress was being examined. Mr. Weekes mentioned that he has another apparatus in action, very similar to this, with the exception that the bell was filled with oxygen, and expressed an anticipation that he should sooner or later detect insect life there. This expectation was realized a few days ago. In an appendix to his communication, bearing date February 27, 1842, he states that on the previous morning he "perceived eight or ten full grown acari in vigorous locomotion on the inner surface of the air-bell."—*Times*.

## DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, March 15, 1842.)

	PRICE.						DUTY and 5 per cent.	DUTY PAID.		
	£	s.	d.	to	£	s.		Same time in 1840.	In 1841, to last week.	
Aloes, Barbadoes, D.P. .... c	10	0	0	to	25	0	0	} B.P. lb 0 2 F. lb 0 8	29,576	26,237
Hepatic (dry) BD..... c	5	0	0		10	0	0			
Cape, BD. .... c	2	10	0		3	10	0			
Anise, Oil of, German, D.P.... lb								F. lb 1 4	65	—
E. I. .... lb	0	5	9		0	6	0	E. I. 1 4	354	255
Asafoetida, B.D. .... c	1	10	0		3	0	0	c 6 0	5	—
Balsam, Canada, D.P. .... lb	0	1	0		0	1	3	lb 0 1	684	423
Copaiba, BD. .... lb	0	1	1		0	1	3	c 4 0	106	209
Peru, BD. .... lb	0	4	6					lb 1 0	798	62
Benzoin (best) BD..... c	25	0	0		50	0	0	c. 4 0	14	29
Camphor, unrefined, BD..... c	16	0	0					c 1 0	99	192
Cantharides, D.P. .... lb	6	2	6		0	2	8	lb 1 0	3,122	2,902
Caraway, Oil of, D.P. .... lb	0	8	6		0	8	9	lb 4 0	124	182
Cascarilla or Eleutheria Bark, D.P.C.	3	10	0					lb 0 1	546	10,619
Cassia, Oil of, BD..... lb	0	7	6		0	8	0	lb 1 4	703	571
Castor Oil, East India, BD..... lb	0	7	2½		0	0	0	c 1 3	765	738
West I. (bottle) D.P. 1½ lb								} lb 0 6	124	235
Castoreum, American .... lb	0	17	0		0	18	0			
D.P. Hudson's Bay .... lb	0	18	0		1	0	0			
Catechu, BD. Pale .... c	0	15	0					} c 3 6	13,348	9,305
Dark ....	0	13	0		0	14	0			
Cinchona Bark, Pale (Crown).... lb	0	2	0		0	3	6	} lb 6 1	27,227	1,053
BD. Red .... lb	0	2	0		0	4	0			
Yellow .... lb	0	2	4		0	3	0			
Colocynth, Turkey .... lb	0	1	8		0	2	9	} lb 0 2	238	3,222
D.P. Mogadore .... lb	0	1	0							
Calumba Root, BD. .... c	0	9	6		1	15	0	lb 0 2	—	4,411
Cubebs, BD. .... c	4	0	0		4	5	0	lb 0 6	8,727	8,056
Gamboge, BD. .... c	10	0	0		22	0	0	c 4 0	30	8
Gentian, D.P. .... c	1	8	0					c 4 0	219	156
Guaiacum, D.P..... lb	0	0	3		6	1	0	c 6 0	62	3
Gum Arabic, Turkey, fine, D.P.... c	10	0	0		11	0	0	} c 6 0	940	2,015
Do. seconds, D.P. .. c	4	10	0		8	10	0			
Barbary, brown, BD. c	2	7	0					} c 6 0	1,637	1,653
Do. white, D.P..... c	4	5	0							
E. I. fine yellow, BD. c	1	17	0		2	5	0	c 6 0	1,379	3,807
Do. dark brown, B.D. c	1	5	0					c 6 0	11	5
— Senegal garblings, D.P. .... c	4	0	0		8	0	0	lb 0 1	—	1,995
— Tragacanth, D.P. .... c	7	0	0		0	0	3	lb 1 0	3,303	2,680
Iceland Moss (Lichen), D.P. .... lb	0	0	2½					lb 0 6	14,562	10,478
Ipecacuanha Root, B.D. .... lb	0	1	4					} lb 0 3	2,697	3,203
Jalap, BD. .... lb	0	3	4		0	2	9			
Manna, flaky, BD. .... lb	0	2	6					} oz 6 0	479	242
Sicilian, BD. .... lb	1	0	0		3	10	0			
Musk, China, BD. .... oz	5	0	0		14	0	0	} c 6 0	73	20
Myrrh, East India, BD. .... c	2	0	0		11	10	0			
Turkey, BD..... c	0	8	0		0	9	0	lb 2 6	391	—
Nux Vomica, BD..... lb	0	8	6		0	9	0	lb 1 0	9,805	7,870
Opium, Turkey, BD. .... lb	0	8	6		0	9	0	lb 4 0	1,910	637
Peppermint, Oil of, F. BD..... lb	0	3	11					lb 0 1	61,075	62,692
Quicksilver, BD. .... lb	0	4	0		0	5	0	lb 1 0	3,502	5,588
Rhubarb, East India, BD..... lb	0	8	0		0	9	0	} F. lb 1 0	4,784	5,693
Dutch, trimmed, D.P. lb	0	8	6		0	9	0			
Russian, BD. .... lb								} lb 1 0	635	119
Saffron, French, BD. .... lb	2	0	0							
Spanish .... lb	0	1	0		0	1	9	lb 0 6	33,588	36,284
Sarsaparilla, Honduras, BD..... lb								} lb 2 6	2,521	1,869
Lisbon, BD. .... lb										
Scammony, Smyrna, D.P..... lb	0	18	0		1	0	0	} E. I. lb 0 6	21,984	19,219
Aleppo .... lb	0	0	5		0	0	6			
Senna, East India, BD. .... lb	0	1	6		0	1	8	} Other sorts 0 6	20,831	20,472
Alexandria, D.P..... lb	0	1	0		0	1	3			
Smyrna, D.P. .... lb	0	1	0		0	1	3			
Tripoli, D.P. .... lb	0	1	0		0	1	3			

‡‡‡ B.D. In Bond.—c. Cwt.—B. P. British Possessions.—F. Foreign.—D. P. Duty paid.

AYLESBURY UNION.

To the Editor of the Medical Gazette.

SIR,  
PERMIT me to notice an error in the leading article of your last number.

In alluding to the Aylesbury Union, you mention Assistant-Commissioner *Wade* as having suggested that one medical man could undertake the duty of the whole Union.

Now Colonel *Wade* has, I believe, had nothing to do with the Aylesbury Union: he has certainly been distinguished for a more judicious and humane administration of medical relief than most of his colleagues; and, in the pamphlet of the Provincial Association, from which you have quoted, it is expressly stated that Mr. Assistant-Commissioner *Gilbert* formed the Aylesbury Union.

Trusting to your love of truth to correct the mistake which you have inadvertently made—I am, sir,

Your obedient servant,  
THE SECRETARY TO THE POOR-LAW COMMITTEE OF THE PROVINCIAL ASSOCIATION.  
March 29, 1842.

SOCIETY FOR RELIEF OF  
WIDOWS AND ORPHANS OF  
MEDICAL MEN,  
In London and its vicinity. (Etab. 1788).

A HALF-YEARLY general court of the members of this Society was held on Wednesday at the Gray's Inn Coffee House. Sir Charles M. Clarke, Bart. vice-president, in the chair.

It appeared from the auditor's report that the sum of £682 had been granted for the past half year to thirty-one widows and fourteen children of deceased members; and that £100 had been funded.

Certain resolutions of former courts, regulating the amount of subscriptions by the age of members, were finally confirmed; and other resolutions for the registration of the Society, agreeably to the provisions of the Acts of Parliament for regulating Friendly Societies, were, after some discussion, carried unanimously.

By this proceeding the Society will obtain the privilege of arbitration in case of dispute, and of investing its funds, upwards of £42,000 stock, with the Commissioners for the Reduction of the National Debt.

We beg to call attention to the advertisement of the Annual Dinner of this Society to take place on Saturday, the 9th of April. His Royal Highness the Duke of Cambridge in the chair.

FRENCH ANTI-SLAVERY JOURNAL.

We beg to acknowledge the receipt of a number of a French journal entitled *Annales*

*de l'Institut d'Afrique*. It is dated Jan. 1842, and is the first number for this year. It contains, under the head of *Passeé et Avenir*, a review of what has been done for the abolition of slavery during the past year; and this is followed by articles on the characters and virtues of negroes, on Toussaint l'Ouverture, a report of the discussion on the slave-trade in the Chamber of Deputies on the 24th of January, &c. &c.

We heartily wish success to a journal and an institution whose object is the removal of the foulest stain upon civilization.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
CERTIFICATES.

Thursday, March 24, 1842.

W. V. Beadle, Bristol.—H. Wright, March, Cambridgeshire.—W. R. Shlell, Newcastle-upon-Tyne.—R. Roper, Sheffield.—H. B. Square, Kingsbridge, Devon.

A TABLE OF MORTALITY FOR THE  
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending  
Saturday, March 19, 1842.

Small Pox .....	3
Measles .....	17
Scarlatina .....	6
Whooping Cough .....	39
Croup .....	12
Thrush .....	3
Diarrhoea .....	6
Dysentery .....	3
Cholera .....	0
Influenza .....	0
Typhus .....	23
Erysipelas .....	1
Syphilis .....	1
Hydrophobia .....	1
Diseases of the Brain, Nerves, and Senses ..	129
Diseases of the Lungs, and other Organs of Respiration .....	269
Diseases of the Heart and Blood-vessels ....	19
Diseases of the Stomach, Liver, and other Organs of Digestion .....	60
Diseases of the Kidneys, &c. ....	5
Childbed .....	6
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	3
Diseases of Joints, &c. ....	2
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	106
Old Age or Natural Decay .....	51
Deaths by Violence, Privation, or Intempe- rance .....	24
Causes not specified .....	2
Deaths from all Causes .....	792

NOTICE.

Dr. Addison's paper, on the Colourless Corpuscles, and on the Molecules and Cyto-blasts in the Blood, has been received.

WILSON & OGILVY, 57, Skinner Street, London.



# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, APRIL 8, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

Delivered at King's College, London,

BY DR. WATSON.

*Enteritis: its symptoms; causes; treatment. Mechanical occlusion of the intestinal tube. Colic. Colica pictorum: its symptoms, complications, treatment, and prevention.*

SOME of the diseased states of the intestinal canal, while they differ a good deal in their essential nature, have yet many characters in common. Colic; ileus; enteritis; mechanical obstruction of the tube. It will be convenient, therefore, to consider these disorders in succession, and, in some degree, in connexion with each other.

In *colic* we have pain of the abdomen; pain of a twisting or wringing kind, occupying generally the umbilical region; vomiting; and costive bowels. Similar pains are apt to occur in diarrhoea; but they are transitory, and are then termed *gripings*, or more learnedly  *tormina*. When they are violent, and more permanent, and, above all, when attended with constipation, they constitute colic.

You have not forgotten the symptoms of *peritonitis*. They are, briefly, pain in the abdomen, increased on pressure; and fever.

Now if, to the symptoms of colic, you add the symptoms of *peritonitis*, you have the symptoms of *enteritis*: by which word I desire to express the disease that is commonly called *inflammation of the bowels*. The term has lately been extended so as to signify any and every form of inflammation which any portion or tissue of the intestinal canal within the belly may suffer; but I use it in the old-fashioned meaning. Cullen

makes two species of enteritis. One of these consists in inflammation of the mucous membrane of the intestinal tube: he calls it enteritis *erythematica*. That is not the disorder I am about to speak of; but the other of his species, the enteritis *phlegmonodes*. I say that in colic, we have abdominal pain, constipation, and vomiting. In peritonitis, the functions of the stomach and intestines are not, necessarily, affected: in enteritis they are. There is inflammation, not merely of the peritoneal coat, but of the cellular tissue uniting the several tunics, probably of the muscular tissue also, and often of the whole substance of the bowel at the inflamed part.

When the intestinal channel is any how closed up, and a bar placed to the passage of its contents, the symptoms of colic are very apt to ensue; and at length, the obstacle continuing, fatal inflammation is set up.

The term *ileus* is applied, I believe, to those cases, whether inflammatory or not, in which, by an inverted action of the intestines, their contents are carried, in a retrograde course, into the stomach, and thence out of the body by vomiting.

Having made these explanations, I shall now address myself more especially to the consideration of enteritis.

It is of much practical importance to discriminate between enteritis and the disorders that resemble it; and particularly to distinguish it from colic. When it commences, as it sometimes does, by distinct rigors, and is attended by thirst, a hot skin, and a hard and frequent pulse, there is no room for doubt. But it often begins insidiously, with mere colicky symptoms; the pain, at first, is not much augmented, it may even be somewhat eased, by steady pressure. If we mistake colic for enteritis, the error is of no great moment; but the opposite mistake, which is more common, may be fatal. Blood-letting, and the other remedies of enteritis, will not aggravate the mere colic; they may even, though unnecessary, relieve

the patient. Some of the remedies of mere colic are, however, highly dangerous when there is inflammation of the bowels. Physicians may fall into this error: patients who choose to prescribe for themselves, commonly do so. They take stimulants, cordials, carminatives—the pleasantest and nearest at hand is a glass of brandy, or of gin. And in true colic these means are frequently of great service: but they exasperate the symptoms, and increase the mischief when the disease is enteritis. Indeed treatment of this kind will sometimes urge colic into enteritis. If the case be ambiguous, you must act upon the most unfavourable supposition, and treat the complaint as if you were sure that inflammation was present.

The pain of enteritis is increased by pressure. The pain of colic is not only not made worse, but it is actually mitigated often, by pressure; and it usually intermits entirely. I know that when there is simply flatulent distension of the intestines, pressure does sometimes increase the patient's uneasiness; but the uneasy sensation is very different from that acute sensibility which belongs to inflammation of their peritoneal covering. In enteritis there are also *paroxysms* of severe pain, determined, probably, by the peristaltic movements, or by the temporary distension, of the inflamed parts of the bowel; and the pain has frequently a twisting character: but there is not any thorough intermission. There is a duller abiding pain between the sharper fits. It is to be observed also, as a diagnostic circumstance, that, as in peritonitis, the patient lies on his back, with his knees drawn up, and is fixed in that position, and for the very same reasons. If, in his agony, he tosses about his arms, the trunk is kept motionless, and the respiration is thoracic: whereas in mere colic the mode of breathing is not altered, and the patient is apt to be turning and writhing in all postures, and out of one posture into another.

The nausea and vomiting are often most distressing. The patient not only rejects immediately whatever food, drink, or medicine he swallows, but he has fits of retching, when the stomach is empty. In some instances, matters are cast up having the appearance, and something of the odour, of liquid *fæces*: or resembling, at any rate, the offensive fluids which are found in the small intestines after death in these cases. I cannot say that I have ever seen genuine excrement ejected, unequivocal ordure: yet this may well happen if it be true that clysters, introduced into the rectum, have been voided through the mouth. Such a phenomenon would show that the whole tube was

pervious; that there was no mechanical obstruction.

Although the fever, in the outset, may be high, and the pulse strong and hard, it soon becomes (as in all acute abdominal inflammations) small and wiry; or weak, and like a thread. In bad cases, as the disease proceeds, the abdomen begins to swell, becomes tympanitic; hiccup sometimes comes on; the pulse intermits or beats irregularly; the extremities grow cold; the features are sharpened and ghastly; cold sweats break out; the pain ceases perhaps; and the sphincters relax. The head is generally unaffected. Now and then delirium occurs late in the disease; but much more frequently the intellect remains clear to the very last. Death begins at the heart, and takes place in the way of asthenia.

You may probably have observed that the symptoms which I have been describing are just the symptoms which the surgeon so frequently encounters in cases of strangulated hernia. The symptoms of that surgical complaint are, in truth, most commonly at least, the symptoms of enteritis, caused by the forcible closure of the bowel. Obstruction to the passage of the contents of the gut gives rise to its inflammation. And we often find, after death preceded by the signs of enteritis, an internal mechanical obstruction—an internal strangulated hernia. In some cases, bands or strings of coagulable lymph, the products of bygone inflammation, have formed snares (so to speak) for the gut, which at length they catch and constrict. They do no harm till some coil of intestine gets beneath or beyond them; and then they strangle it, as the phrase is. I have twice seen (as I think I formerly stated) the appendix vermiformis prove the immediate cause of fatal internal hernia. In one of these cases, the person had been a private patient of Dr. Macmichael; and I went with him to examine the body. The free end of the appendix had become adherent to the mesocolon; and so a loop was made, through which a portion of the gut had passed. In the other instance, which I saw in Edinburgh, the appendix was literally tied round a piece of the intestine. Sometimes, again, there is intussusception: the upper part of the tube slips into the lower, fills it up, obstructs it; and inflammation fixes it there. Or it may be that a chronic thickening of the coats of the intestine has narrowed its channel; or a tumor presses upon the intestine from without; or some foreign substance, or morbid accumulation, plugs it up within; in all which cases a chronic disorder passes at length into acute inflammation. A very small hernia at one of the usual orifices—not large enough to manifest itself externally—is sometimes the

cause of the obstruction ; even though only a portion of one side of the gut may be nipped in the aperture.

Sometimes, but according to my experience less frequently, there is no mechanical impediment to account for the constipation. In all cases, whether there be mechanical obstruction or not, the inflamed portion of the gut is of a red or dark colour ; distended by its gaseous or liquid contents ; covered often, on its peritoneal surface, with coagulable lymph ; or adherent to the contiguous organs. When the gut is mechanically closed, the part which lies on this side the obstacle, as we follow the natural course of the channel, is inflamed ; the part which lies beyond it is pale, contracted, and, to all appearance, healthy. The line of demarcation is abrupt and strong ; and it is determined by the obstacle. And the distinction between the healthy and inflamed portions is usually as sudden and decided, when there is no apparent obstacle. I mean that up to a certain spot the intestine is red like a cherry, or dark like a grape, large, and smeared (perhaps) with lymph or with pus ; while immediately beyond that point, and throughout the remainder of its course, it is white, empty, and shrunk up into the semblance of a cord. The pathology of these last forms of the disease is full of difficulty. Some have held that the contracted part was the original seat of disease, namely, of *spasm* ; and that the upper adjoining portion of intestine became distended and inflamed in consequence of such spasm. Without attempting to explain these phenomena, which are comparatively unfrequent, I content myself with observing that it is the distended part which is the really inflamed part, and that its muscular coat appears to have lost its natural contractile power—not (I fancy) from overstretching, as now and then happens to the urinary bladder—but from the effect of the inflammation.

The inflamed portion of bowel is often of a very dark colour, and even almost black, from the great congestion of blood in its tissues. Now this black colour has sometimes been erroneously set down as an evidence of gangrene. You must not trust to the mere colour, however. If the coats of the bowel be firm, and if the peculiar odour of gangrene be wanting, you are not to conclude that mortification has taken place, simply from the dark appearance of the intestine.

Enteritis, not dependent upon any mechanical occlusion of the bowel, may arise under the operation of the ordinary causes of internal inflammation : cold and wet, for instance, applied externally, and especially to the feet and legs. Cold is thought to be particularly injurious in this way when the exposure happens soon after a meal : pro-

bably because at that time the digestive organs, being in activity, receive a more copious supply of blood.

The mechanical impediments that occur *within* the bowel, are still more various in kind than those which constrict it from *without*. Hardened faecal matters : intestinal concretions. Some of these are curious, and I shall hereafter have a word or two to say respecting their composition. Persons who are in the habit of taking a good deal of magnesia, or of chalk, to relieve acidity and heartburn, are liable to have these substances accumulate, and become indurated in the intestines. They generally begin to collect, I believe, around some accidental nucleus : and such a nucleus may very readily be supplied. A cherry-stone, a fish-bone, a gall-stone, that has found its way into the bowel. Even a pill, prescribed to cure, may thus come to kill one's patient. Dr. Prout was asked to analyse certain odd-shaped, triangular bodies which had been voided at stool, and were supposed to be gall-stones : but he found that they were specimens of Plummer's pill, which had defied the solvent action of the gastric juice, and had passed into, and lingered in, the bowels. Unbruised mustard-seed, and carbonate of iron, are other remedial substances which, injudiciously administered, have collected in hard masses, and produced intestinal disease. It is seldom that we can discover, during life, what is the exact nature of the mechanical obstacle : but I have observed this peculiarity in most of the cases in which I have known it produced by *intussusception*, that after severe and sudden symptoms of obstruction and inflammation, *blood* has been passed by stool. Sometimes the included portion of bowel itself sloughs away, and is expelled *per anum*.

Inflammation of the bowels requires very much the same kind of treatment as peritonitis : indeed, the disease is in most cases peritonitis, and something more. The patient must strictly abstain from every sort of stimulus, and confine himself as much as possible to the horizontal position. He must lose blood also from the arm, and the earlier the better. The lancet is not to be withheld merely because the pulse is small. If the artery becomes fuller, and its beating more distinct, under venesection—nay, if the patient does not become faint—the first bleeding should be a large one. This is not only the safer plan, but in the long run it is the most economical of the blood and strength of the patient. As in simple peritonitis, the abdomen must be covered with leeches, and afterwards with fomentation cloths. Should one spot or region be more painful and tender than another, on that part the leeches are to be accumulated. It may be requisite to repeat

the venæsection and the leeching once, or twice, or many times; the propriety of such repetition depending upon the urgency and obstinacy of the symptoms, and upon the age and state of the patient. I am speaking of idiopathic enteritis, and of its earlier stages. In the advanced periods, when feebleness of the pulse is associated with tympany of the belly and coldness of the surface, it betokens weakness and sinking, and the tendency to death by asthenia; and, consequently, it then indicates support rather than depletion. So also when the enteritis is not idiopathic, but consecutive—when we have reason to believe that it arises out of a firm mechanical impediment—our employment of blood-letting must needs be modified by that circumstance.

One point in the management of enteritis, requiring great caution and judgment, relates to the exhibition of purgative medicines. The costive state of the bowels is apt to be looked upon as the main evil, and their evacuation as the chief indication of treatment; but great mischief, I apprehend, is likely to arise from the exclusive pursuit of that indication. I am still speaking of the idiopathic disease, where it is presumable that no mechanical impossibility exists to the passage of the feces. Purgatives given by the mouth are often rejected by the stomach, with great distress to the patient. If they are retained, and fail to operate, they must do more harm than good. Certainly they should not precede the venæsection. I well remember, though it is now many years ago, being myself badly treated for enteritis. Being ill, in a strange place, I sent for the nearest practitioner, who happened to be a very ignorant man. Finding that I was sick, and that my bowels did not act, he gave me, for two or three days in succession, strong drastic purges, with no other effect than that of increasing my sickness, and adding to the abdominal pain I suffered. I was then seen by a most intelligent physician (this was before I had paid any attention to physic myself), and the first thing he did was to have me copiously bled; and the immediate effect of that bleeding was to send me to the night chair. And I am persuaded that when evacuations follow the administration of purgatives in such cases, they are often owing to the blood-letting and other anti-phlogistic measures that are employed at the same time. These are the opinions of Dr. Abercromby also, who says, "I confess my own impression distinctly to be, that the use of purgatives makes no part of the treatment of the early stages of enteritis; on the contrary, that they are rather likely to be hurtful until the inflammation has been subdued." It is an instructive fact, that when purgative medicines *do* operate during the height of the inflammation, the stools they

produce are merely watery; and it is only after the inflammation has been reduced that *feces* are discharged, and then in such quantity sometimes as to show that they must have been shut up in the bowels during the period of active inflammation.

You should wait, then, for the effect of other measures, blood-letting, leeching, fomentation, before you give active purgatives by the mouth; and in all stages of the disease, whatever laxatives are given should be of the mildest kind, such as are least likely to excite irritation of either the stomach or bowels.

The same objections do not apply to enemata, which sooth while they evacuate the lower parts of the canal. You will read or hear of great service done by an infusion of tobacco, or by the smoke of tobacco, thrown into the bowels through the rectum. Dr. Abercromby speaks of a weak infusion of the leaves as being a remedy of very general utility. It should, I apprehend, be a *weak* infusion to be at all safe; but, of my own knowledge, I can tell you little or nothing about it. I do know, however, that the injection of a large quantity of merely warm water is often of much use: from two to six pints, for example, thrown up gradually and gently. Indurated feces are softened and brought away in this manner, and the warm water acts as an internal fomentation.

Of internal medicines I believe the best you can give is a combination of calomel and opium, in such proportions as will restrain the purgative qualities of the calomel. The opium allays pain, and, perhaps, relaxes spasm; the mercury tends to arrest the inflammatory action; and the more immediate effects of this combination are often found to be, a settling of the irritable stomach, a disposition to diaphoresis, and an improved pulse.

To sum up then, bleeding, and calomel and opium, are to be resorted to for checking the inflammation; and when that is in great measure abated (and probably not before) it will be right to give some mild laxative to clear out the bowels. There can be none more suitable or convenient than castor oil. But before we venture upon purgatives by the mouth it will be proper to wash out the bowels by lavements of tepid water. These injections *may* sometimes have mechanically a beneficial effect upon the parts concerned in the inflammation; untwisting, for example, a twisted bowel; or setting free the half incarcerated intestine.

There is one very important point in the treatment of enteritis that I have yet to mention. I have told you that in the advanced stage of the disease symptoms of sinking often come on; a total cessation of pain, failure of the vital powers, and coldness of the body. These symptoms, this collapse and approach

to syncope, are generally considered to denote gangrene, and, therefore, a hopeless state of disease. Yet in many cases which have proved fatal after similar symptoms, not a trace of gangrene has been discoverable. So that this unpromising change in the symptoms does not always indicate a morbid condition which is necessarily mortal. And if the patients are to be saved at all, they are to be saved by wine and support. We must combat the obvious tendency to death by asthenia.

"A man, aged forty, was affected with enteritis in the usual form, for which he was treated in the most judicious manner by a respectable practitioner. On the fifth day the pain ceased; the pulse was 140, and extremely feeble and irregular; his face was pale, the features were collapsed, and his whole body was covered with cold perspiration; his bowels had been moved. In this condition (says Dr. Abercromby, from whom I quote the case) I saw him for the first time. Wine was then given him, at first in large quantities, and, upon the whole, to the extent of from two to three bottles during the next twenty-four hours. On the following day his appearance was improved; his pulse 120, and regular; the wine was continued in diminished quantity. On the third day his pulse was 112, and of good strength, and in a few days more he was well."

Dr. Abercromby relates other cases to the same effect; and most physicians, I suppose, have occasionally seen such. They teach us that we must not abandon our patients in despair, even under the most adverse circumstances. If diarrhoea should supervene with this state of collapse, opiates must be joined with the wine. External warmth is also a powerful auxiliary.

I know of no cases of disease more painful to witness or to treat than those which result from invincible obstruction of the intestinal tube. They are attended, at length, with enteritis; but they differ much in some respects from what I have called idiopathic enteritis. The inflammation is an accident or consequence of the obstruction; or of the means used to overcome it. They happen usually somewhat in this manner. A person thinks it expedient to take some aperient medicine. It has no effect. He repeats the dose. It causes pain and gripings, and probably sickness also; but still the bowels are not moved. Enemata are employed. They bring away, perhaps, some hardened feces; but there is no farther relief. Meanwhile the patient may have a clean tongue, a quiet pulse, a cool and soft skin, and a supple and painless abdomen. Purgatives of a more drastic kind are tried, but tried in vain; and the physician is summoned.

Now the first thing which you have to do,

when called to a case of "obstruction of the bowels," is to search narrowly whether there be not some unsuspected external hernia. All delicacy must be waived; and every part of the body, where hernia may possibly shew itself, must be submitted to inspection. If none be found, the rectum, and in women the vagina, must be severally explored. Stricture, or a quarry of impacted feces, may possibly be detected in the one: a uterine or other tumor, pressing upon the bowel, may perchance be felt through the other. I shall never forget the shock I once experienced on being sent for to see a woman, of middle age, who was *in articulo mortis*, and who, as I was told, had for some days been labouring under sickness, pain in the abdomen, and constipation. In her left groin there was a large palpable strangulated hernia, which had not been detected by the practitioner in attendance, simply because it had not been looked for; and which was discovered only when it was too late.

Remember, therefore, that in every case of obstinate costiveness, with signs of inflammation within the abdomen, it is absolutely necessary, for your own credit and subsequent comfort, as well as for your patient's safety, to make diligent and thorough enquiry after such herniae as may be recognised externally.

But often you find nothing of the sort, and then you are at liberty to prosecute with more energy and decision the purgative plan of treatment. You prescribe strong doses of jalap and calomel: black draughts. The stomach being irritable, you give *pills* of cathartic extract, and repeat them at short intervals; or large doses of calomel, ten grains or a scruple, three or four times in succession. You inject stimulating clysters. Then you are driven to croton oil: and at last, in some vague hope of relaxing spasms, to opiates. If symptoms of inflammation spring up, you put fairly in force the remedies of inflammation; and especially blood-letting. But all is in vain. The medicines are vomited; or, if retained, they serve but to augment the patient's distress, producing or renewing the pain and the nausea. It is extraordinary how comfortable the patient sometimes becomes upon the intermission of these active attempts. Now and then he suffers tormina, or has fits of retching; but in the intervening periods his sensations and outward condition may be those of perfect health; only there is no alvine discharge.

Now, under these afflicting circumstances, the question will force itself upon you—how long am I to pursue the purgative system? Common sense, and common humanity, answer—you must stop it the instant you are convinced that there is a mechanical obstacle, which cannot be overcome. To persist in the use of drastic purgatives after



that conviction, is to inflict wanton and needless torture upon the patient. But how are you to know this? That is one difficulty. And how are you, believing that it is so, to satisfy the patient's friends that his disorder is irremediable; and to resist their importunity to try this and that; and to persuade them to look passively on, while their relative is slowly perhaps, but surely, perishing? These are great and terrible difficulties.

You will be urged by all imaginable suggestions; even the most absurd. Crude mercury may perhaps be one. Pounds of this metal have been swallowed in such cases; in the hope, I suppose, that it would force a passage by its weight. But the obstacle may be in an ascending coil of intestine. And if not, experience does not teach us to put any faith in this rude mechanical remedy. It has often done mischief, and seldom or never done any good. This metal is apt to become oxydized in the body, and then to produce very distressing salivation. This is an evil which I have known to occur, and to trouble the patient greatly, sometime after the ineffectual exhibition of large doses of calomel.

Dashing cold water over the abdomen and the lower extremities, is another rough expedient, which is sometimes successful in producing evacuations. It was adopted, after various other measures had failed, in the case in which the bowel was tied down by the adherent appendix vermiformis; and it caused the emptying of that part of the canal which lay beyond or below the internal hernia. It is plain that this partial success can be of little or no use; certainly of none that can compensate for the shock and annoyance of the cold affusion.

Let me not, however, be misunderstood. I do not say that you are to abandon all hope when purgatives (and, if need be, blood-letting) have failed, after a few trials, to obtain evacuations from the bowels. Nor even that you are necessarily, for that reason, to give up the use of purgatives. The intestines may be torpid and insensible to ordinary stimuli, and really require strong rousing. Dr. Abercromby mentions the case of a gentleman whose bowels were locked up by an accumulation, as the result showed, of black hardened feces. The obstruction, which had resisted the most active purgatives, and was accompanied by an evident and painful distension of a part of the abdomen, yielded at once to the repeated application of galvanism to that part: each application being immediately followed by a copious evacuation. Here the flagging muscular action was restored, apparently, by the galvanic stimulus. Very lately I attended an elderly lady, who, from Wednesday morning to the next Monday noon, had had no alvine relief, notwithstanding the employment of

the most active cathartics. She suffered frequent paroxysms of pain and vomiting: but the abdomen was scarcely, if at all, distended; nor was it tender. At length she complained that what she vomited was stercoraceous—to use her own words, “what came upwards ought to have passed the other way.” It was a thin, brown-coloured, ill-smelling fluid. Dr. Mayo and Mr. Arnott were now associated with me in this case, and they touched and felt the abdomen as I had previously done. The lady observed that their hands were heavy; and she fancied that the pressure they made had displaced something within. And I believe that it was so: for before our consultation in the next room was over, word was brought us that the bowels had acted. She had passed a liquid motion precisely resembling the stuff she had last vomited. The next day, with one of several similar stools, a hard lump was voided, which proved to be a gall-stone, as big as a small walnut.

As large quantities of warm water had without difficulty been injected, I infer that the concretion had been impacted high up in the bowel, probably at the valve of the cæcum. Some years previously the lady had suffered severe abdominal pains, which at the time were ascribed to the passage of a biliary calculus through the gall-ducts.

In this instance there was no evidence of any strong contractile efforts of the bowel above the place of obstruction.

Large enemata—as much as the intestines will patiently receive—gradually and gently introduced, and repeated three or four times a day, may sometimes succeed in breaking down and washing away masses of hardened excrement: and if these enemata are composed of milk or beef-tea, and are suffered to remain as long as they will, they may answer another important purpose; they may contribute sensibly to the nourishment of a patient who cannot retain food in his stomach. They are generally very soothing and comfortable; allaying tormina, and abating sickness: and they are adapted to every stage and variety of the complaint.

There are, however, cases in which we arrive at the melancholy but sure conviction that some mechanical impediment has rendered the bowel absolutely and hopelessly impassable. We fear this when, the constipation being obstinate, we discover a tumor, or hardness, in some part of the belly: or when we receive a history of some former inflammatory attack, since which the bowels have been habitually difficult to regulate. Our fears are strengthened when the patient feels that the injections reach a certain spot, and there always stop; and that the intestines rumble, and roll, and propel their contents downwards to the same spot, and no farther. And this is the distinctive

symptom upon which I desire to fix your attention. The abdomen gradually enlarges, especially if the patient is able to retain food; the intestines fill up above the obstacle; and then throes of pain occur, *spasms* the sufferers usually call them, attended with sickness; and during these pangs you may feel, and if the abdomen be uncovered, you may see, immense coils of intestine, as big perhaps as one's arm, rise and roll over, like some huge snake, with loud roarings and flatulence. When this takes place the time for giving purgatives is certainly over. The distended bowel requires no stimulus; it acts, and strives with all its power, but strives in vain, to overcome the opposing barrier. If you would consult your patient's ease, if you would not embitter and abbreviate his slender remnant of life, harass him no farther with active remedies. In some cases violent inflammation quickly supervenes, and death arrives in a few days: in others, the patient survives, without any evacuation from his bowels, but with long intervals of ease and comfort, for four, or five, or six weeks. Even a brief respite may be of infinite value; giving time for the arrival of distant friends—for the settlement of worldly concerns—and for preparation of the spirit against the inevitable hour.

It is to these circumstances of irremediable disease that *opiates* are eminently adapted. Even when the symptoms are less desperate, they are not without their use. I cannot better express what I think upon this point than in the words of the first Heberden, who says: "The probability of advantage from anodynes has determined me to recommend them; and experience has strongly confirmed this judgment. Under the protection of an opiate I have successfully given more and stronger purges than would have staid without its help. The patient's strength has been kept up by some refreshing sleeps: and even in hopeless cases, in which the dying person is harassed by unspeakable inquietude, he may be lulled into some composure; and without dying at all sooner, may be enabled to die more easily. Lord Verulam blames physicians for not making the euthanasia a part of their studies: and surely, though the recovery of the patient be the grand aim of their profession, yet where that cannot be obtained, they should try to disarm death of some of its terror; and if they cannot make him quit his prey, and the life must be lost, they may still prevail to have it taken away in the most merciful manner."

I have spoken of these cases as being irremediable: but perhaps I have spoken somewhat too absolutely. Life may, sometimes, be saved by a surgical operation. The gut may be punctured above the seat of obstruc-

tion, and suffered to discharge its contents through what is called an *artificial anus*. This expedient is feasible, however, in those cases *only* in which the obstacle is situated near the termination of the large intestine; i. e. in the rectum, or in the lower part of the descending colon; for here only can we ascertain, with any thing like certainty, the exact place of the impediment, and here only may the colon be pierced, from behind, without injury to the peritoneum. Under no other circumstances, in my opinion, would an attempt to relieve the patient, by cutting down upon and opening the bowel, be justifiable. An artificial outlet in the loin would probably be less disgusting to the patient, and less offensive to others, than if it were in front of the body. I am not aware that the operation has ever been done in this country. It has been practised, successfully, in France. The mode of performing it I am not competent to teach you. In an appropriate case I should think it right to *mention*, though I should be slow to *recommend*, this *anceps remedium*. The risk of failure, and the penalty of success, should both be set fairly before the patient. The choice between certain death, on the one hand, and the chance of living with a very loathsome bodily infirmity, on the other, must be made by himself\*.

It remains that I should say something more respecting *colic*: which may exist independently of enteritis, and of mechanical occlusion of the bowel; although the three are very often combined and intermixed in the course of the same disease.

In colic there is pain in the abdomen, constipation of the bowels, vomiting often: and these are symptoms which occur also in enteritis. The pain is a twisting or wringing pain generally, round the navel: and such is the character of the exacerbations of pain experienced when the bowels are inflamed. These are the points of *resemblance* between the two maladies: and it is of much importance, as I told you before, to observe their *differences*; and to note the marks by which the one may be distinguished from the other. It is, then, an essential difference that enteritis is attended with fever, and with tenderness of the belly. The pain is increased by all kinds and every degree of pressure; and the patient, fixed in the supine position, breathes with the intercostal muscles only, and carefully avoids any movement which would call the abdominal muscles into action, and so compress the inflamed bowel. In colic, on the other hand, the circulation is tranquil; there is no fever; and the pain is even mitigated by pressure. The patient

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\* See an interesting paper on this subject, by Mr. Erichsen, in the *MED. GAZETTE*, April, 1841.

will lie on his belly for ease; nay, he will press it, with the whole weight of his body, across the back of a chair, and obtain comfort by that manœuvre. During the paroxysms the pain is often most violent; what the old writers call *dolor atrox*—atrocious pain: but there are intervals of complete ease. Even when the pain is worst, the patient tosses and shifts from one posture to another in search of relief; and he does not wear that anxious and apprehensive aspect which we see in those who are labouring under enteritis. The pain arises, I imagine, from the distension of the bowel, here and there, by gas; or, it may be, from spasm; or from both these states at once. At any rate, it is often associated with audible flatulence, and with evident outward spasm. The abdomen is hard, and drawn spasmodically inwards towards the vertebral column; and its muscles are partially and strongly contracted, gathered up into lumps and knots. None of these circumstances belong to enteritis.

However, there is good reason for believing that, even in mere colic, the pain may sometimes be augmented by pressure. When a portion of the gut has become rapidly distended, considerable uneasiness may result from its forcible compression; although, as Dr. Abercromby states, the kind of pain can generally, by attention, be distinguished from the sensitive tenderness of an inflamed peritoneum. Luckily, if such pain on pressure should lead us to mistake a case of pure colic for a case of enteritis, the error is on the safe side: and we must always bear in mind the tendency remarked in colic, when the complaint is neglected, or badly treated, to run into actual inflammation. In fact, as any obstacle to the passage of the alimentary matters through the bowels may give rise to colic, colic is sometimes merely the first step towards acute inflammation arising out of a continuance of the obstruction. And having told you that colic may be thus produced, I have at once introduced you to a large class of its causes which have already been spoken of in the present lecture as frequent causes of inflammation also.

But colic, like inflammation of the bowels, sometimes arises without any apparent or detectible obstruction, of a mechanical kind, to the free transit of the contents of the alimentary tube. And there is one particular form of colic, that requires a separate notice. The *colica Pictonum*—so called from its great frequency, heretofore, among the Pictones, or inhabitants of Poictou—is produced by the slow introduction of the poison of lead into the system.

Now the colic which has this origin is not to be distinguished, in its ordinary symptoms, from any other kind of colic. But the abdominal pain is usually, in such cases, a

part only of more general disease. It has received, in different places, a variety of names. *Colica pictonum*; the painter's colic; the Devonshire colic; the bellain of Derbyshire; the dry belly-ache of the West Indies. In all cases it acknowledges the same cause—the gradual entrance of lead into the body.

In this country we see the disease more often in painters than in any other persons. They use, as you know, white lead in the preparation of their colours; and they are perfectly familiar with this terrible colic. We see it also in all workmen whose occupations bring them habitually into contact with preparations of lead. No doubt there are very great differences in the susceptibility of this effect of the poison of lead. Persons have been known to suffer *colica pictonum*, in consequence of their sleeping for a night or two in a recently painted room. On the other hand, I have myself seen a patient who became affected with the disease, for the first time, after working with white lead for 19 years. Generally the first attacks of colic are well recovered from. The obstinate constipation of the bowels is at length overcome: the patient obtains ease; and forthwith recurs to his previous habits: and after a period, which varies in different individuals, he is again laid up with the colic. Even the primary attacks are usually attended with pains in the head, and in the limbs; sometimes with cramps; sometimes even with epilepsy and coma. At length, in one of these attacks of colic, or after one of them, when the violence of the pain, and the costiveness, have yielded to treatment, the patient finds that he has lost the full power of using one or both of his hands. The wrists, as the patients express it, *drop*. You see at once what is the matter, by the characteristic state of the arms and hands. The extensor muscles of the hands and fingers are palsied: so that when the arms are stretched out, the hands hang dangling down by their own weight; and the patient is unable, by any effort of his will, to raise them. The palsy is local: it does not proceed from any diseased condition of the nervous centres. The affected muscles waste; and the atrophy is very remarkably seen in the bundle of muscles composing the ball of the thumb. Even from this condition the patients often are capable of complete recovery. But if they persist in following their former calling—or if, without knowing it, they continue to be habitually exposed to the exciting cause of the disease—they become miserable cripples, fall into a state of general cachexia, and sink at length under some visceral disease. The poison accumulates in the body, and saps the powers of life. Francis Citois, a native of Poictou, who published an excellent and one of the earliest accounts of the disease,

in the year 1617, has drawn the following graphic picture of its effects. Its cause was not at that time suspected. Speaking of the wretched sufferers, he says, "Per vicos, veluti larvæ, aut arte progredientes statuz, pallidi, squallidi, macilenti conspiciuntur; manibus incurvis, et suo pondere pendulis, nec nisi arte ad os et cæteras supernas partes sublatis, et pedibus non suis sed crurum musculis, ad ridiculum ni miserandum incassum compositis, voce clangosâ et streperâ."

The course of the disease is usually such as I have just described it. The colic happens first, perhaps several times: and then arrives the palsy. But in a few instances I have known this order reversed. The wrists have dropped, when there had been no preceding colic.

The great cause of this fearful malady was first made out by our distinguished countryman, Sir George Baker. He set on foot an enquiry into the origin of what was called the *Devonshire colic*; so common was it in that county. He found, first, that it occurred chiefly in persons who drank the *cyder* manufactured there: and, by degrees, he traced the source of the malady to the admixture of lead with the *cyder*; either designedly, for the purpose of sweetening it; or by the inadvertent employment of lead in the construction of the *cyder* mills and vats. It was under circumstances of the same kind that the colic of Poictou originated. Preparations of lead were used—not fraudulently, but openly and honestly—to prevent the wines of the country from turning sour; the injurious influence of lead upon the human body not having then been ascertained. So also, equally convincing proofs of the adulteration of *rum* by means of lead, giving rise to frequent attacks of dry belly-ache in the West Indies, are given by Dr. John Hunter, in the *Medical Transactions*. I invite your attention to his papers, and to Sir George Baker's, on this subject. They afford a capital specimen of medical research and reasoning. Various causes, as you may suppose, had been assigned for this disorder. These are one by one investigated, and set aside; until, by this method of exclusion, the real source of all the mischief is detected. Sir George Baker's papers contain a great deal of curious and useful information in respect to the various modes in which this poison of lead may find its way, without being suspected, into the animal economy. The subject is one of vast importance in its relation to medical police; but my limits will not allow me to follow it beyond the point where it ceases to be directly connected with the practice of physic.

*Colica pictonum* is seldom fatal as colic; or during the persistence of the abdominal symptoms: yet enough instances of death occurring while the colic was present, but

from other accidental causes, have now been collected, to enable us to say, that no appearances have been met with in the intestinal canal, calculated to explain the pain or the constipation. Andral relates five cases, in which the body was carefully examined after death preceded by the painter's colic. He found neither inflammation, nor any remaining trace of spasm. The intestines were neither dilated nor contracted, but of their natural texture and appearance. Merat, who has written a good treatise on this form of colic, gives the dissections in four fatal cases: fatal, as I mentioned that they sometimes are, by the supervention of coma. There was no discoverable mark of disease; the alimentary canal was empty, and the large bowels contracted; as they were also found to be in rabbits which had died of lead colic. For animals are susceptible of the disease, and it may be produced in them by the slow impregnation of their bodies with the specific poison. Dogs, cats, and rats, that inhabit houses and manufactories wherein lead is much used or prepared, are known to be attacked both with colic and with palsy. With respect to the contraction of the large intestine in these cases, we must not be too ready to attribute it to spasm; for the bowel, when empty, is apt to be contracted.

When the palsy has been of any continuance, the affected muscles not only shrink and waste, but undergo a structural change, which is obvious to the sight. They become pale, almost white, dry. John Hunter examined the muscles of the hand and arm of a house-painter, who died, while thus paralytic, in St. George's Hospital. He found them of a cream colour and opaque; instead of being of a purplish red, and semi-transparent. And, since his time, lead has been detected in the palsied muscles, and in the brain, by chemical analysis. It is doubtless conveyed, by the blood, to all parts of the body: why it fastens solely or chiefly on particular muscles, or particular nerves, nobody knows. The pain it occasions, whether in the abdomen or in the limbs, is generally thought to be neuralgic. It is one of the poisons that do not appear to find a ready exit from the body. Very recently, a most curious symptom, pathognomonic, I believe, of the presence of lead in the system, has been pointed out by Dr. Burton: and now that it has been pointed out, one can hardly understand how it escaped discovery so long. It is a blue or purplish line running along the edges of the gums, just where they meet the teeth. Dr. Burton first noticed this six years ago, but wisely refrained from making his observations public until he had had time and opportunity enough to satisfy his mind that he was not mistaken. A paper of his on the sub-



ject was read at the Medical and Chirurgical Society last January (1840). I cannot resist the temptation to read to you the notes of a case which has subsequently occurred to me in the hospital. Mary Anne Davis, a middle-aged woman, presented herself with dropped wrists. It was an exquisite example of palsy of the extensor muscles of the hands and fingers. She could raise her arms, but her hands hung down like the talons of a bird, or like the fore paws of an erect kangaroo. This began nine weeks before. She complained of pain, beginning under the nails, stretching up the back of her hands, and reaching sometimes to the elbows. The bottoms of her feet had also been tender; and at night were burning hot.

Seeing the dropped wrists, we thought immediately of the poison of lead. But the patient was a female. We do not often see these effects of that poison in women; for obvious reasons. At first we could get no clue to the mode in which lead could have found its way into her system. Her husband was a broker. She had not been living in a newly-painted house: and had (she said) no concern with lead in any way. Lead often creeps in, however, through undetected channels, and I could not help suspecting it here. Mr. Pyper, my clinical assistant, soon elicited another part of her history, which added to our suspicions; namely, that before the palsy occurred, she had had pains in the abdomen, and costive bowels, for five days together. Nay, she had a recurrence of colic after her admission. This was a strongly corroborating fact; but what clinched the proof was the discovery of a decided blue rim along the edges of nearly all her gums. This conclusive evidence led to further cross-examination; and at last it came out that some of her sons (she had seven) occupied their leisure time in the preceding summer with making bird-cages, and painting them green, in the one room in which she habitually lived. The case altogether was a very neat one.

Mr. Tomes pointed out to me some interesting circumstances which led him, at one time, to think it probable that the colour is produced by some chemical action between the tartar that forms on the teeth, where they meet the gums, and the lead which pervades the system. This woman's teeth, like those of many in her rank of life, were loaded with tartar. In one place was visible a stump, level with the gum, and surrounded by a ring of tartar; and *there* was also a corresponding border of blue. In other places there were gaps, where teeth once were; here there was, of course, no tartar; and here there was no blue line on the edge of the gum. I do not know exactly in what manner the chemical union arises, but the colour depends, I believe, upon a *sul-*

*phuret* of lead, formed somehow by the action of sulphuretted hydrogen upon the metal.

This discovery of Dr. Burton's is not a mere piece of curiosity, but is likely to be of use in various ways. In the first place, it may settle the nature and cause of many doubtful cases; as it did, indeed, of the one just narrated. The poison of lead causes pains which resemble, and no doubt are sometimes mistaken for, the pains of rheumatism; it has other obscure consequences too: and an inspection of the gums may often greatly elucidate such cases. Dr. Burton finds that small quantities of lead given as a medicine will produce the phenomenon. In two instances it occurred within two days. One of these patients had taken 15 grains of the acetate of lead in that time; the other 24 grains. A correspondent of his produced the blue rim in 24 hours; viz. by four doses, of 5 grains each, exhibited every 6 hours. He finds too that the lime remains distinct after death; even more so than during life. It may afford valuable information therefore to the medical jurist in cases of suspected poisoning with the salts of lead. It is, I say, an *early* consequence of the absorption of lead. It will teach us, as the mercurial affection of the gums teaches us, that the medicine is pervading the system; and admonish us to look out for, and guard against, colic. It may apprise workers in lead that their caution has been insufficient; that the poison has entered; and that they are in peril of belly-aches and palsy. It is a capital diagnostic sign also between colic so arising, and colic from other causes; and between colica pictonum, and the pain of inflammation of the bowels.

In the *treatment* of colic—and especially of the lead colic—the great indication is to get the bowels to act. If the pain of the belly be increased on pressure, if the pulse be at all accelerated, if the face be flushed, and there be the slightest approach to fever, it will be right to take blood from the arm. It is a measure of safety as regards the possible existence of inflammation: and if there be no inflammation present or impending, it will tend to remove the spasmodic state of the muscles which goes along with, and perhaps chiefly constitutes, the disease. External warmth should also be applied; diligent friction, with some stimulating liniment; or, what is much better, a mustard poultice, or a turpentine stupe. My colleague, Dr. Wilson, has been very successful in relieving these patients, by putting them into a hot bath, and having a large quantity of the water in which they are immersed, thrown gradually into their bowels by means of a proper syringe. The bath presently becomes polluted, to the great satisfaction and refreshment of the patient. It will generally be



expedient to give a full dose of calomel and opium; ten grains of the one with two of the other. Sometimes the effect of the opiate is to suffer the bowels to empty themselves; showing that the previous difficulty was probably spasmodic. Usually the calomel and opium will soothe the vomiting, the restlessness, and the pain; and then a full dose of neutral salts, or of castor oil; or (if these do not succeed) of the last-named remedy, castor-oil, quickened by one or two drops of the oil of croton, will give rise to free evacuations from the bowels; and the patient soon returns to his ordinary state of health. It is sometimes necessary to repeat this practice, this alternation of purgatives and anodynes: but when once the bowels have been freely moved, the disease, in general, becomes very tractable.

At La Charité, in Paris, there is what is called a specific mode of treatment followed. It is complicated and rough, but not a whit more successful than the simpler plan which is universally adopted in this country. You may see it described, if you are curious on the subject, in most of the French books. I think it is given in detail in Ratier's *Formulary of Hospital Practice*.

Some have recommended salivation for the cure of the painter's colic, on the principle, I conjecture, of driving out one metallic poison by another. But the two may combine, for aught I know, to plague the patient. The practice is quite unnecessary.

You will be consulted about the palsy which arises from lead, and especially to remedy the dropped wrists, which render the patient incapable of earning his livelihood. Now in the early stages of the palsy, and in its primary attacks, you may often succeed in effecting a cure. Electricity has been thought useful, applied in the way of sparks at first, and of slight shocks afterwards, along the muscular parts of the extensors of the fingers. It accelerates the recovery to give the hand and fingers the mechanical support of a splint, made for that express purpose, and so contrived that the hand and fingers are kept extended through the greater part of the day. Patients labouring under this kind of palsy resort to the Bath waters for a cure: and I learn from a gentleman who once held the office of house-surgeon to the hospital there, that the physicians have much more faith in the use of the baths, with shampooing, and in splints and blisters to the palsied muscles, than in electricity. The warm douche is a promising expedient: the electro-magnetic apparatus, perhaps, still more so.

According to Andral and others, who have had more experience of that drug than I have, there is no form of palsy so likely to be benefited by *strychnine* as this which proceeds from the poison of lead. I should

recommend you to try the safer methods of binding the hand to a splint, and stimulating the muscles by friction, shampooing, or electricity, before you resort to that active poison.

It is observable of this disease, as of many, and, indeed, of most others, except certain contagious febrile diseases, that when once it has occurred, it is much more liable to occur again, upon a repetition of the exciting cause, than before. It is of very great moment, therefore, that they who are necessarily exposed to the poison of lead—as painters, plumbers, printers (who handle leaden types), colour-grinders, potters, and glass-blowers (who use the oxide of lead in their respective manufactories), shot-makers, workers in lead mines, and so on—it is of great importance that these persons should be made aware of the means which are best adapted for their protection against the injurious agency of the poison: and we ought to be able to give them advice in that matter. The rules for their guidance are short and simple; and if carefully observed, I believe they will generally prove successful. They resolve themselves into cautions against the admission of the metal or its compounds into the body through any channel.

1. To prevent its introduction through the skin minute attention to *cleanliness* is necessary. The face and hands should be washed, the mouth rinsed, and the hair combed, several times in the day; and bathing and ablution of the whole body should be frequently performed: also, the working clothes should not be made of woollen, but of strong compact linen; and they should be washed once or twice a week at least; and they should be worn as little as possible out of the workshop: and some light impervious cap might protect the head while the person is at work.

2. Care should be taken that none of the poison be admitted into the system *with the food*. The workmen, therefore, should not take their meals in the work-room, and should be scrupulous in cleansing their hands and lips before eating.

3. The entrance of the poison into the air-passages during respiration should be guarded against as much as possible. Masks have been recommended for this purpose: none, probably, would be more convenient or more effectual, than Mr. Jeffreys' orinatal respirator.

There is a notion prevalent in some places, which apparently has some foundation, that the free use of fat, and of oily substances, as food is a preservative against the colic. A physician near Breda informed Sir George Baker that the village in which he lived contained a great number of potters, among whom he did not witness a single case of lead colic in the course of fifteen years; and he attributed their immunity to their having

lived very much on butter and bacon, and other fat kinds of food. De Haen also was told by a physician, the proprietor of a lead mine in Styria, that the labourers there were once very subject to colic and palsy; but that after they were exhorted by a quack doctor to eat a good deal of fat, especially at breakfast, they were exempt from these disorders for three years. This a kind of prophylaxis that is very easily adopted.

More recently Liebig has asserted that "the disease called painter's colic is unknown in all manufactories of white lead in which the workmen are accustomed to take as a preservative, *sulphuric acid lemonade*, a solution of sugar rendered acid by sulphuric acid."

If this be so, the lemonade must protect the system by converting any other salt of lead, which might find entrance, into an *insoluble* sulphate: solubility being necessary to give efficacy to any poisonous substance.

ON

## CONCUSSION OF THE BRAIN\*.

By R. A. STAFFORD,

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DURING the last year there have been several injuries of the head in this Infirmary. I have had under my own care no less than four or five cases of concussion of the brain, and two of fracture of the skull. No injuries are more important than those of the head; and as they are of common occurrence, and constantly happening in private practice, more especially in the country, I shall make a few observations upon their symptoms and upon their treatment.

My object will be, in the present lecture more especially, to speak of concussion of the brain. Concussion of the brain is caused from violence—either from falling from a height—a blow with a stick or bludgeon—or from something falling upon the head; for instance, a man may be working upon a scaffold, his foot slips and he falls upon his head; or he may be thrown from his horse; or in defending himself he may receive a blow upon the head; or again, a tile or a brick may fall from the top of a house and strike him. These are the usual ways in which such injuries are received. When any one of them have happened, the patient falls apparently lifeless to the ground; he is quite insensible, and when taken up he has no power whatever over his limbs; he is at first considered as killed, being pale and cold, looking like a corpse. It is observed, how-

ever, that he breathes. He is taken to the first surgeon's house, or laid upon a shutter and carried to an hospital. When arrived at either of these places, more symptoms of life appear: he is still cold and senseless; his breathing is more perceptible, but he vomits. The reason of vomiting is the immediate connexion of the brain and the stomach by the sympathetic nerve; the brain being shocked or injured, the stomach sympathizes, the action of that nerve being impaired. The surgeon examines his head, and finds he has received a blow upon it; that there may or may not be an extensive wound; but there is no fracture. He examines the eye, and finds the iris stationary, and rather contracted than dilated. He finds also that the patient rather improves in sensibility than otherwise; consequently he considers that he has concussion of the brain. Now comes a most important practical point. A crowd collects round the door, and the first question which is asked is "Has he been bled?" The answer is, no! "What? not bled!" is the cry. "Surely he ought to have been bled!" One of the most intelligent of the crowd then steps forward and enquires of the surgeon how the man is, and asks "but do you not think, sir, he ought to be bled?" The surgeon, being intelligent, makes this answer, "Sir, the fact is, this poor man has concussion of the brain, and is at present in a state which we term collapse, that is, his powers of life are so diminished, that if I were to bleed him he would die. When reaction returns I then shall bleed him, and perhaps largely, according as his symptoms may require." I recollect, when I was house surgeon to St. Bartholomew's Hospital, which is now some years ago, I was attending for Mr. Abernethy a neighbouring institution. It happened to be a very windy, gusty morning, and tiles, chimney-pots, and bricks, were tumbling about in all directions. One of the boys of the establishment went out for a holiday, and had the misfortune to have a sign board blown upon his head. He fell to the ground senseless, and was carried home in this state. I was sent for, and found him pale, cold, and almost lifeless; his pulse was hardly perceptible, his breathing heavy, and he was constantly vomiting. His extremities were cold and motionless, and the pupil of the eye contracted. I found he had concussion of the brain, and was in a state of collapse. An apothecary of the old school was standing by his bed side, just beginning to tie up his arm to bleed him. When he saw me he gave up the case to my care, as I was attending for Mr. Abernethy, to whom I was responsible. I declined bleeding the boy, and the old gentleman was much surprised. We argued the matter, he saying

\* Being the substance of a lecture delivered at the St. Marylebone Infirmary, Nov. 10, 1841.

it was the usual practice. I would not give up the point, telling him respectfully, that when reaction returned, I would do it, but I was sorry I could not in the stage of collapse; giving him my reasons. He appeared displeased that I should be so obstinate, and differ with one of his age and experience: however, I was firm; I bled the boy at the proper time, and the case did well.

The treatment in the stage of collapse in concussion of the brain is, to apply warmth and give stimulants. First put your patient's feet into hot water; then put him to bed, having had it warmed; apply hot bottles of water to his feet; pour down his throat, if his sickness will let you, a tea-spoonful of brandy and water every now and then, which is the best stimulant, and let him lie quiet. You must however be careful of your stimulant; as soon as warmth begins to return, and the pulse rises, it must be left off, or you will feed the inflammation which is to follow. Here I shall mention a case of extreme collapse. It happened that five people, while at work, were precipitated from a scaffold, at the height of four stories. Three of the five were killed on the spot; two survived, and were brought to St. Bartholomew's Hospital. One experienced a compound fracture of the leg, with other injuries; and the other, who came under my care, as house surgeon, had concussion of the brain, besides dislocating his ankle, breaking the other leg, fracturing two ribs, and being bruised all over; he was in almost a lifeless state—as cold, and I may say as pale, as marble; it could only be known that he breathed by putting a mirror to his mouth. I sat by his bed-side with a bottle of brandy in my hand, and poured tea-spoonful by tea-spoonful down his throat. In twelve hours he began to change; he breathed, warmth returned, his pulse could be felt, reaction had taken place; in fact he lived. This case made a deep impression on my mind. It pointed out to me that we ought never to give up a patient in the stage of collapse, and I hope it will do the same to all of you; that is to say, while there is life there is hope. This man ultimately recovered.

In concussion of the brain, as warmth returns, so will the symptoms change. You will find that the patient now will begin to have a consciousness; if you shake him, he will rouse as if from a heavy sleep, and having muttered something, will fall again into a drowsy stupor. The sickness will continue, but the skin will become hot, and the pulse will gradually rise until it beats with violence. Now will be the time to bleed, and it must be done largely, even to syncope. Now reaction has really taken place, and we must employ all our means to keep down inflammation. It will not only

be necessary to bleed from the arm, but blood also must be taken from the head. Should the pulse rise, the patient must be bled again, and venesection must be repeated as often as the symptoms require it. The head also must be shaved, and a cold lotion constantly applied upon it. The bowels must be freely opened, which will be best effected by giving a large dose of calomel, combined with jalap, and followed by a black dose, besides which it will be necessary to keep the bowels open by saline purgatives, and to keep down fever by antimonials and other febrifuges. During the progress of the case, you will find perhaps that the patient will complain of pain in the head, first in one spot and then in another, perhaps over the brows, on the temples, the top of the head, or the back part. You will feel the spot, and you will find it hotter than the rest of the head; an application of leeches is the best remedy, as often as such a symptom occurs. After this treatment the patient will perhaps be better, but still, although you have bled him largely, both generally and locally, yet he will have headache, pain in the head, and a low muttering delirium; he will answer you a question tolerably reasonably, but will immediately forget what he said, and go on wandering. You will rouse him again; he will again answer you rationally, but he will fall into the same low muttering. He will complain that he cannot bear the light, and it will be necessary to darken the room. This perhaps will be four, five, or six days or more after the accident. You have repeatedly bled him from the arm, bled him locally from the head, used a freezing lotion on the head constantly, purged him, given him febrifuges, blistered the back of the neck, and even perhaps administered a dose or two of opium. You feel his pulse; it is rather low than high; soft, compressible, and not so frequent as in fever—perhaps about 80 or 90; the bowels have acted; the head is not hot; in fact you see no particular symptom to demand any particular treatment. You feel in your own mind rather puzzled. I have done everything this case requires, but something still is wrong. He certainly is better, but far from well. I have bled him until I dare go no further; I have reduced him in every way, until I fear to do more. What can I do? Ask yourself this question. I know the injury he has received. Suppose he were to die at this moment. In what state should I find the brain on dissecting it? Why, the dura mater would be congested with blood, the arachnoid membrane inflamed, and with perhaps considerable deposit of lymph upon it; the pia mater the same; and on cutting into the substance of the brain, instead of its natural colour it would be

florid, of a reddish blush, and points of blood-vessels would be seen all throughout its structure. The brain being in this condition, I have only one remedy I can depend upon, and that is mercury. I am afraid of lowering any more. In fact, I must give mercury until I touch the mouth.

I will now relate a case or two which came under my care in this Infirmary, which will illustrate this treatment. In June last Thomas Somers was precipitated from the top of a coach, and fell upon his head; he was taken up senseless. He remained in this state for an hour or two, when his senses gradually returned; but he answered questions, when roused, in a very confused manner, being also drowsy. When reaction was fully established, he was bled largely, and in the evening he was cupped on the temples. His head was shaved, and a cold lotion constantly applied. He was purged and blistered; and the bleedings, both generally and locally, was repeated as often as symptoms required. On the sixth day, although he was better, yet he still had pain in the head, and could not bear the light. He could answer a question correctly, but afterwards fell into a low delirium, muttering to himself, and his mind wandering on all kinds of subjects. His pulse was rather weak than strong, compressible, soft, and beating about 90. He had but little fever. He could not bear losing any more blood, or being more lowered. Under these circumstances I thought it better to give him mercury, just sufficient to make the mouth sore. I ordered him three grains of calomel, and a quarter of a grain of opium every six hours. From this time he gradually got better, and his intellects became restored. In four or five days his mouth was sore. The calomel was diminished in quantity, and at length omitted altogether. In two months he was discharged quite well.

The second case occurred about a month afterwards, and was not so severe as the last. This man fell from a ladder and struck his head. He was stunned for a few minutes, and then was brought into this Infirmary. Reaction soon returned, and he was bled, cupped on the head, and treated much the same as in the last case. Five or six days elapsed, and though better, he did not improve. He was still delirious, and appeared at a stand still. He took calomel and opium every six hours. He immediately began to amend, and in six weeks went away quite well.

I now shall mention a third case, the last of the kind which was admitted under me, one of extreme interest, one so melancholy and distressing, although the individual recovered, that it is even painful to tell the tale. It happened only four months ago. A man had lived with his wife on

very good terms, having had a family by her, and each attached to one another, when, having been married five years, he suddenly became insane, from jealousy, and in his mad fury he took an extreme hatred to his wife. He determined to murder her. He took the first opportunity, when she was off her guard, to take hold of the poker, and beat her on the head. She fell senseless to the ground, and lay for dead. He had method enough in his madness to know that he was amenable to the law; in fact, that he should be hanged for the crime. He took a razor, and cut his throat from ear to ear. He died. The neighbours, having heard a disturbance, and finding that it suddenly ceased, began to think it extraordinary. All was silence, a deadly silence! They broke into the room, and beheld the sad spectacle. The woman lying apparently dead, and her husband with his throat cut. The poor woman was brought into this Infirmary. On examining her head, she had an extensive laceration on the right parietal bone, which was fractured at the part; but there was no depression, and only the outer table of the skull was broken. She had no symptoms of compression of the brain, as the iris was at first contracted and afterwards it acted. She was delirious for some days, and after being bled &c., she was ordered calomel and opium every six hours. She took this remedy for seven or eight days, going on with the other treatment, and at length she came to her senses. It is affecting to relate, but the first words she spoke were, "How is my husband? How are my children?" The nurse prudently said they were well, but an incautious friend told her all that had happened. The shock was so great that she immediately became delirious again, and remained so for several days. After some time, she gradually got better, and left the hospital as well as could be expected under such unhappy circumstances.

These three cases appear to me to illustrate the benefit of administering mercury so as to affect the mouth in the second stage of concussion of the brain. I shall now offer an explanation of the *modus operandi* of mercury in concussion of the brain.

I before told you that you would find the dura mater, on dissection, congested with blood; the arachnoid membrane inflamed, with lymph deposited upon it; and the brain congested. The action of calomel on the brain produces the same effect as it does in iritis. It causes the absorption of all the deposited lymph on the membranes, and relieves, by the same rule, the congestion of the substance of the brain. In iritis we see the lymph deposited upon the iris in globules, and we know unless it is absorbed that it will become organized, and thus destroy the sight. We give mercury immediately to



salivation; and as the calomel acts we can see the absorption of lymph on the iris going on. It is gradually taken away until all is gone. The same effect, no doubt, is produced on the brain and its membranes; the lymph and effused matter is absorbed, and the congested vessels are stimulated and restored to a healthy action.

There are other cases of concussion of the brain less severe than those I have just mentioned, but still of a very serious nature. A man is thrown from his horse, and falls upon his head. He is stunned for a minute or two, and then gets upon him again; feeling excessively confused. He goes home at once, or rides on, thinking he will gradually get better. In a few hours headache comes on, and he becomes flushed in the face, and feverish. His friends about him now send for his medical attendant, who finds him in the state I have mentioned, with a sharp full pulse. He is bled largely, takes a dose of calomel, succeeded by a brisk aperient; applies an evaporating lotion constantly on the head, and is ordered low diet. The aperient is followed by saline medicines with a febrifuge; and with the occasional application of leeches, he gets much better in a few days. He begins to live as usual, but he finds his headache and other symptoms return. He is obliged to be put on a strict regimen for a length of time as to food, exercise, &c.; and perhaps it is found necessary that he should take mercury so as to affect the mouth. By way of example, I will relate a case.

**CASE.**—A gentleman of rank, although a remarkably good horseman, was riding round the Park, and his horse, being frightened, suddenly started and threw him, and he fell upon his head. He was stunned for a minute or two, when he got on his horse again, feeling excessively confused, and rode home. He immediately saw his medical attendant, who advised him to remain quiet, to apply an evaporating lotion on the head, and take very low diet. As he was no worse in the morning, he was ordered a brisk aperient, and to go on in the same manner. This description of treatment he continued for a few days, and he got much better. Being in high life, keeping an excellent table, and having a keen appetite, he could not resist the temptation before him. He did not eat much, but too much for the state of his head. He became flushed in the face, heated, and feverish. His pulse was much accelerated, head hot, and he felt a great nervous excitement: in fact he was worse than he ever had been. A consultation was held on his case, and he was ordered to lose blood repeatedly, by cupping, or by the application of a considerable number of leeches on the head, to go on with the former treatment, keeping the bowels regular, and of all

things, to keep on a strict regimen of low diet. He did so; but although better, he still had very distressing feelings in the head. Mercury was prescribed for him so as to affect the mouth. However, he continued very unwell. Being in parliament, he found his parliamentary duties too much for him; indeed his medical attendants would not allow him to go there, advising him to leave town. He did so. He remained in a very ambiguous state of health for a very long time, requiring the greatest attention and care. He was restricted in diet, taking meat but seldom, and all his food in a diminished quantity, and was obliged to lead a very regular quiet life; for whenever he deviated in the least from the plan laid down, his headache and feverishness returned, and his digestion became bad; having, at the same time, restless and sleepless nights. He continued in this state for nearly a year. His health was carefully watched, and I believe he owes his life to the strict attention that was paid to him. He has never been quite the same man since.

The description of cases like the one I have just related, are those which lay the foundation of ill health, disease of the brain, and sometimes insanity. You ought not, therefore, although the injury may appear slight, to think lightly of it. Treat it as serious—for it really is so when we consider their consequences after having treated the active symptoms. Keep your patient on a strict regimen of diet, regulate the bowels and the secretions, and enjoin the greatest quietude for a considerable period after the accident.

## MUSCLES OF THE EYE.

*To the Editor of the Medical Gazette.*

SIR,

You did me the favour, in the number of your journal for December, 1836, to insert a paper of mine on the functions of the muscles of the eyeball, in which I attempted to arrange them into two sets, by considering some as acting by the stimulus of the will, and, therefore, as voluntary muscles, and others as acting sympathetically or independent of the will, and, therefore, to be considered as involuntary muscles. I also attempted an arrangement of the nerves by which these two different actions are governed, by dividing them also into voluntary and involuntary. My reasons for supposing such difference in their functions to exist I then fully stated, and need not now again enter upon.



I have been much gratified, in reading Dr. Carpenter's *Principles of Physiology*, just published, to find that he takes up the same view, in many respects, which I advanced in my paper more than five years ago (and here I beg to state that I am not arguing for priority of claim, nor for originality in theory, but merely wish to compare statements made in my paper with those now made in the work above referred to, and which I think support my views, and lead me to suppose that my theory was not altogether visionary). Part of my theory was, that the upper division of the third nerve was voluntary, while the lower was involuntary or sympathetic only. My words are—"It is upon this division of the third nerve into its two branches that I mean to explain the action of the remaining muscles, and wish to show that the inferior or ganglionic portion governs the involuntary or sympathetic movements of the eye-balls, while the superior or ganglionless portion governs the voluntary motions. In order to support this theory that I have advanced, we must see if these two sets of muscles are so employed," &c. &c. I then proceed to give my reasons for supposing such difference in the action of the muscles supplied by the third nerve, to exist. I also considered the functions of the other nerves, endeavouring to show that the sixth nerve was purely voluntary, and that the fourth was involuntary or sympathetic only. I sum up my views in these words:—"Thus it is seen that there are three voluntary muscles, namely, the levator palpebræ, superior rectus, and external rectus; and two voluntary nerves, namely, the superior division of the third nerve, and the sixth; while there are four involuntary muscles, none of which act, except in sympathy with the voluntary muscles, and are supplied by two nerves, namely the inferior division of the third nerve, and the fourth."

Dr. Carpenter enters very fully into the particular actions of the different muscles of the orbit, and also the functions of the various nerves distributed to them, which I need not here quote. The conclusion, however, to which he comes he sums up in the following words:—"It will be remembered that this nerve subdivides into two principal branches, of which one supplies

the levator palpebræ and superior rectus, whilst the other is distributed to the internal and inferior rectus, and to the inferior oblique. Now the former appears to be of a purely voluntary character." Again he says, "There is good reason to believe, therefore, that the actions of the inferior branch of the third nerve are in great part automatic, while those of the superior branch are purely voluntary." The only difference between these two passages is this; that the word *sympathetic* or *involuntary* is used by me with regard to the functions of the inferior branch of the third nerve, whilst Dr. Carpenter uses the word *automatic*. Dr. C. also mentions Valentin's theory, which I believe to be very similar in principle to the one now referred to. I, however, never heard of his theory until reading the above work, in which it is quoted. Hoping you can find room for these few remarks,

I have the honour to remain,

Your obedient servant,

EDWARD F. LONSDALE.

82, Guildford Street, Russell Square,  
March 24, 1842.

## SCARLATINA.

*To the Editor of the Medical Gazette.*

SIR,

THE prevalence of scarlet fever during the spring and autumn of the past year has afforded me numerous opportunities of witnessing that disease in all its forms, from the simple efflorescence of the skin, with or without inflamed fauces, to the most severe and fatal malignant sore-throat. But the epidemic of last year possessed characters which are not, I imagine, very common under the usual attacks of this complaint. Some cases passed regularly through their course, such as it is usually described; in some there was no eruption, in others no sore-throat; in some the usual premonitory symptoms ushered in the disease, in others it came on at once in all its severity, destroying life in the space of a few hours. The chief peculiarity, however, was the tendency in most cases to terminate in glandular swellings or supurations in the neck, throat, or ears. When these glandular swellings suppurated well, and were allowed to open

of themselves, the patients were almost sure to recover; but when they were opened early, nature seemed jealous of the interference, and unwilling to complete the salutary operations in which she had been engaged.

I will not, however, detain you by any lengthened observations upon the forms of a disease which most practitioners had as good an opportunity of noticing as myself: my principal object in addressing you is briefly to direct attention to a mode of treatment of one of the *sequelæ* of scarlet fever, which I have found invariably to succeed, and which I have not seen noticed by others. The complication or consequence of the disease, to which I refer, is dropsical effusion or anasarca, which is of frequent occurrence whenever scarlet fever is prevalent. This affection is generally considered to be of an inflammatory character; and blood-letting, and other antiphlogistic remedies, are recommended for its removal. The general success of such measures is also fully established by the concurrent testimony of various authors; but during the late epidemic I had occasion to treat the disease in patients who had been so much debilitated by the previous attacks of fever, that I had not the courage to produce any further reduction of the powers of the constitution.

From having observed its power of strengthening the constitution, with, at the same time, a tendency to prevent inflammation and to increase absorption, I was induced to make trial of iodine. I prescribed it in the form of solution recommended by Lugol, viz.

*R. Iodine ℥j. ; Iodid. Potass. ℥ij. ; Aquæ 3vij. M. ft. Solutio Iodin. concentr.*

Of this solution I ordered from 5 to 10 drops for children, and from 10 to 20 or 25 to adults, three times a day in water. In the first case in which it was used it rapidly effected a cure; in consequence of which I prescribed it in every succeeding case that presented itself, and with the same complete success.

If iodine have not hitherto been employed for the cure of anasarca swellings after scarlet fever, I believe I shall have the happiness to have introduced to the profession a safe and an effectual remedy for a troublesome and sometimes obstinate affection: if others have employed it, I have the grati-

fication to add my feeble testimony to the good effects of a mode of practice not so well known or recommended as it seems to me to deserve.—I am, sir,

Your obedient servant,

E. COPEMAN.

Coltishall, March 24, 1842.

## REMARKS ON CONCEPTION.

*To the Editor of the Medical Gazette.*

SIR,

As the subject of conception is still involved in obscurity, allow me, through the medium of your columns, to endeavour to explain this wonderful and inimitable process of nature.

It is not, however, without due deference to the many distinguished physiologists that have preceded me in this important path of inquiry that I enter upon so mysterious a subject; but as my views will be found to differ essentially from those of every author, I am anxious that they should be made public, in order that their truth or erroneousness may hereafter be determined.

I am, sir,

Your obedient servant,

C. BLACK.

Chesterfield, March 22, 1842.

It is generally admitted that in the procreation of the human species the female furnishes the future being in a rudimentary state, which requires the co-operation of the seminal fluid of the male to perfect its development: but the method by which this effect is produced, or the exact channel through which the semen influences the ovum, has not at present been demonstrated. Some physiologists have asserted that the seminal fluid is transmitted into the Fallopian tubes, in which it comes into direct contact with the ovum which escaped from the ovarium during coition, and whilst in this situation impregnates it; while others affirm that it remains in the uterus, from which its influence is propagated by sympathy. To neither of these opinions can I subscribe, as will appear from my assuming the following positions:—

1st. That the semen passes no farther than the uterus, and that impregnation may, but does not generally, take place until the ovum enters it.

2nd. That the seminal fluid is absorbed by the mucous membrane of the

uterus, in consequence of which the vascularity of the organ is increased, which causes its subsequent enlargement and the secretion of the decidua vera, by which the ovum is impregnated.

With respect to the former position, it may be argued that if, after killing an animal, we immediately inflate its uterus by means of a blow-pipe inserted into the vagina, no air is observed to pass into the Fallopian tubes, which effect is evidently owing to the position of the valves at the mouths of these tubes. If, then, air is inaccessible to them through the cavity of the uterus, how is it possible for the seminal fluid, which is far less subtle—nay, of an adhesive nature—to enter them? Gravitation can produce no effect in this instance, inasmuch as the Fallopian tubes are inserted into the angles connected with the superior border of the uterus; from which and the preceding data it may, I think, be inferred that the semen cannot pass mechanically beyond the cavity of the uterus. On this supposition I shall endeavour to show that impregnation of the ovum does not generally take place until it has passed into the uterus. Now it is well known that when a woman conceives, the uterus begins to enlarge, and to throw out upon its inner surface a quantity of coagulable lymph, which is subsequently organized, and then styled the decidua vera. These occurrences always take place previously to the introduction of the ovum into the uterus in cases of pregnancy. Unless these effects are produced no conception ensues, although the ovum shall have passed into the uterus. Hence it is absolutely necessary that, to induce pregnancy, a decidua be present. If this is not the case, the ovum, on arriving at the cavity of the uterus, either attaches itself to its mucous surface, becoming a hydatid or mole, or passes out with the next menstrual flux. As it is the nature of every organ, in its rudimentary state, to enlarge in proportion as it is endowed with a greater or less degree of vitality, it is only rational to suppose that the ovum would manifest this disposition to increase during its passage along the Fallopian tube, provided it were impregnated in the ovarium. This, however, is not manifest unless it is retained in the Fallopian tubes, in which situation it occasionally acquires a perfect

development; but even in this situation it is never developed without the presence of a decidua, which, being a production of the mucous membrane, cannot be formed in the ovarium; consequently, no conception can, in my opinion, take place in that organ. Although it is admitted by most authors that a woman may again conceive while there is yet a foetus in utero, I am inclined to believe that such is not the case, and that when superfœtation does exist, it takes place at the time of the original conception, and that, owing to accidental circumstances, the ovum is retained in the Fallopian tube, in which situation it may require a longer period for its full development.

In reference to my second position, there is sufficient ground to believe that the semen is absorbed by the mucous membrane of the uterus. The apparent functions of the mucous membranes are to secrete and to absorb. The secretion of mucus, of the menses, and of the succus intestinorum, are evidences of the former; whilst the effects produced upon the system by an opiate taken into the stomach, or injected into the rectum, are sufficient proofs of the latter. If, then, the mucous coat of the intestines is capable of absorbing, this property cannot reasonably be denied to that of the uterus, inasmuch as no essential difference exists in the anatomy of these structures. We may, I think, therefore, regard it as capable of absorbing the seminal fluid when the latter is presented to it, which function is, probably, heightened by the great excitement into which the genital organs are thrown during coition. To explain the effects of the semen after its absorption, it must be regarded as a specific cause acting upon a certain organ which is expressly designed for the reception of its impression, in producing which impression its action bears a seeming analogy to that of the vaccine lymph in the formation of pustule. It must, however, be remarked, that its operation does not tend to the formation of pus, but first to an increase in the vascularity of the uterus, and subsequently to a deposit of coagulable lymph on its mucous surface, and an evident growth of its muscular structure, which are the immediate effects of such vascular turgescence. In a few days the deposit of lymph becomes or-

ganized by the vessels of the uterus extending into it, thus converting it into a vital membrane, which, in my opinion, possesses all the generative virtues of the seminal fluid in its blood, for the purpose of impregnating the ovum immediately on its attachment to its surface. As soon as this attachment takes place, the vessels of the decidua in contact with the ovum extend into the latter, and by this means afford a direct channel for the decidual blood, imbued with all the properties of the semen, to produce its specific influence on the embryo of the future being.

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ON THE  
APPLICATION OF PHYSIOLOGY TO  
THE STUDY OF THERAPEUTICS  
AND TOXICOLOGY.

By THOMAS WILLIAMS, M.B.

Lecturer on Forensic Medicine at the Webb  
Street School of Anatomy.

(For the Medical Gazette.)

*General considerations.* — In these days of thriving and advanced general knowledge, it can scarcely be imputed to the cultivators of medical science that they ill-perceive or imperfectly understand the intimacy with which its several departments are bound together. A general agreement in the belief is expressed, that it is a fabric of which the unity and completeness are inseparable from the equable progress and mutual dependence of its elements. There is notwithstanding a remarkable discrepancy in the prevalent feeling with reference to the proportions which, respectively, they should be allowed to assume, or the comparative value and importance which should be assigned to each in its place in the fabric. There are not wanting at present many who more willingly would celebrate the praises of a practical man than encourage the labours and reward the exertions of an original investigator. The truth of this observation extends undiminished to the fact, that the opinion entertained by professional men themselves respecting the value of any given branch of their science, will, by rapid diffusion, impart its character to, and even determine, the general opinion of society. The feeling which now pervades the public mind, that the competency of a practitioner for

the management of disease is to be estimated inversely as the measure of his acquaintance with general science and physiology, must undeniably be viewed as the overgrown remnant of that notion, which, in less illumined days, prompted men "*se ἐμπειρικούς ab experientia nominant.*" The dependence of the profession upon the public has entailed upon its members a reaction of this feeling to such severe and oppressive extent, that the desire of distinction, which is the happiest incentive to study in the student, is extinguished in its earliest rise, and the young practitioner is soon lessoned in the painful belief, that the course best calculated to guide to success in practice must consist, first, in imposing a servile silence upon his "love for science;" and then cultivate studiously the "complaisant" and the "suaviter in modo." As the first origin and present sway of such injurious and discouraging sentiments are referrible to the conduct of the profession itself, so it is certain that their removal can only be accomplished by the improving learning, extending acquirements, and augmenting superiority of its members. With men of the present generation, the happier view progressively spreads, that every impulse of advance which medicine can receive will have its source in the thrivings of some of its dependent sciences.

There are no two branches within its pale between which more direct dependence exists than physiology and therapeutics; for nothing can be more flagrant than the error of conceiving that the *ratio medendi* of an agent, without the assistance of physiology, can receive elucidation through the channel of common observation. In all instances two requisites are involved in the right settlement of the mode in which alike a mild remedy and a virulent poison affect the living system. It is essential first to understand the part which the element, organ, or system, upon which its operation is concentrated, fulfils in the sum of the organism. The consideration of the action of the remedy will then resolve itself into determining the extent and nature of the difference between its function under the influence of the agent, and its function in the natural and undisturbed state. While, however, this is indicated as the right path



through which to prosecute the study of these combined sciences, it is designed here neither to assume that the present standard of physiology renders practicable the attainment of such perfection, nor to understate the complex difficulties of the subject. But, for illustration, let it be supposed, that in consequence of the affinity of the bichloride of mercury for albumen, upon its direct introduction into the blood, by combination with its albumen—the properties of the latter are neutralized or modified, as those of an alkali under the agency of an acid—it follows that, unless the compound of the bichloride and albumen be isomorphous with the albumen itself, all the functions in which this principle is engaged will be morbidly affected. Two advantages attend this method of inquiry. If the transformations which albumen undergoes preparatory to its ultimate assimilation were correctly understood, the symptoms of the induced condition might be made the clue to ascertaining the function which albumen performs in the economy; and the inference may further be received, that the effects of agents, upon the system, are not in every instance referrible to a direct or abstract affinity between them and the organ on which their influence is manifested, but rather to the circumstance of their combination with a certain element of the blood more immediately engaged in the function of an organ. Albumen, under normal circumstances, does not appear to be involved in the agency of the kidneys; and it is coincidentally known that mercury seldom affects the secretion of urine. The peculiar animal principles of the salivary secretion, “osmazome,” and “salivary matter,” may, on the other hand, be regarded as albumen modified in the apparatus of the glands. In thus selecting albumen for the purposes of explanation, it will be admitted that, although it constitutes a proximate element, from its numerous uses and relations in the system, the question has been presented in its most complex form. It will be subsequently found that, in estimating the effects sustained by a *system* of organs under the operation of a given substance, the subject will assume a more definite and certain character. In a therapeutic sense it is important that the difference between inorganic and vegetable agents should

be recognized and understood. In the administration of a mineral substance no benefit can be anticipated from its *assimilation* with the structures of the body; for this combination can only occur in very minute proportion. A vegetable principle, however, in virtue of the number and chemical relation of its ultimate elements, possesses the power of ministering to the nutrition, and itself of constituting an integral portion of the body. It is not required to state that the animal derives its materials not from the mineral or inorganic, but from the vegetable kingdom: the intervention of the vegetable is required for the preparation of inorganic material for the purposes of a higher transformation. When, therefore, a mineral acid or metallic oxide is given, they enter into permanent union with the structures with which they are first brought into contact. These compounds are subsequently eliminated by the several secreting organs in an *unchanged* state. This is remarkably the case with the salts of mercury, arsenic, lead, bismuth, iron, and copper. In ultimate and correct fact, it cannot consequently be stated that the effects of these inorganic substances are due to the substance as originally administered, but rather to the compound, formed by its admixture with the elements of the blood. In accordance with this view, it has occurred to me that no less useful than important facts may be ultimately developed, by first combining the agent to be tried with *liquor sanguinis*, in order to the previous formation of the compound, which, in the ordinary method of administration, is produced *after* its introduction into the blood. The insolubility of the resulting product would probably require its injection into the vein. If the effects correspond with those of the unmixed agent, as ordinarily exhibited, the correctness of the conclusion can scarcely be denied that, under the two circumstances, although apparently dissimilar, the resultant effects would have for their cause the agency of the same combination. From this view it is obviously inferrible, that the albuminate of mercury, when *injected* into the blood, ought to affect the system in no way different from the chloride of the same metal when taken into the stomach. I may here state, that I have in view the determination



of this question by experiment; but the importance of attending to this alteration of chemical constitution, which substances undergo in their transit from the stomach to the organs of the body, in no example appears more strikingly than in that of organic salts. A vegetable acid, whatever be the nature of the base with which it is united, it is determined by repeated experiment, is transformed either in the blood, or at some stage of its passage from the stomach to the eliminating organs, into carbonic acid. In all

instances the presence of the base may be determined in the secretions; but the original acid is always found to be converted into the carbonic. By the experiments and analyses of Gilbert Blane and Wöhler, this conversion has been well established in the case of the citrates, tartrates, oxalates, and acetates. From the atomic composition of these acids, it may be readily shown that, in order to their complete transformation into carbonic acid, a considerable accession of oxygen must take place. Thus—

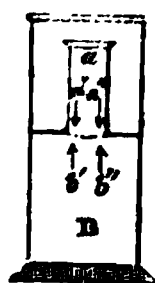
	O.	O.	H.		Ox.	
1 eq. citric acid=	4	4	2	would require	6 eqs. to convert it into carbonic acid=	4 eqs.
1 eq. acetic acid=	4	3	3	„	8 eqs.	„ =4 eqs.
1 eq. tartaric acid=	4	5	2	„	5 eqs.	„ =4 eqs.
1 eq. oxalic acid=	2	3	0	„	1 eq.	„ =2 eqs.

Since the proportion of carbonic acid thus formed is in every instance, with the exception of the last, considerably more than sufficient to neutralise the equivalent of the original base, it is certain that a large amount of this gas must be eliminated in the blood at the moment at which the conversion of the original acid is being effected. It cannot be doubted that the carbonic acid thus generated must render more complex the operation of the original salt. When this subject is considered by the exclusively chemical inquirer, the presence of this nascent agent in the blood is thought to contribute in no very important degree towards the production of the ultimate effects. In regard to the seat and cause of this conversion, Liebig very ingeniously conceives it to occur and depend upon that process of *eremacausis* constantly proceeding in the lungs, by the combination of the oxygen of the air with the elements of the blood. If this view be correct, it results that a considerable proportion of the oxygen absorbed in respiration must be appropriated to the conversion of these organic acids into the carbonic, rather than to the change of venous into arterial blood. It is not improbable that the “cooling operation” of these vegetable salts may have some dependence upon this inordinate appropriation of oxygen. This local combination happens also in the examples of all mineral acids; but the operation of an acid is essentially different, according to the state of concentration or dilatation in which it is given. In the former case it corrodes, by powerfully

and directly combining with the albuminous and fibrinous elements of the part of contact; in the latter its dilution precluding the corrugation of the walls of the stomach, or the parietes of the vessels, it passes unchanged into the blood, to combine with those of its elements, for which it possesses the most pointed affinity: if in minute proportion, the action of the compound which is thus generated in the blood will manifest itself in a *tonic* effect upon the general system, or, if given in larger doses, will operate as an irritant upon the spinal centre, and convulsions will supervene. It cannot be denied that the power of tannic acid would suffer considerable diminution by passage through gelatinous tissue. It is, on the contrary, fully determined that all the salts of the stronger alkaline bases, if not in too concentrated state, perform the circuit of the organic system, without suffering any change of composition. The chlorides, iodides, sulphocyanides, ferrocyanides of sodium and potassium, may be detected unaltered in the various secretions of the body. I may here incidentally remark, that I have succeeded, by properly adjusting the inflated lung of the salamander under the microscope, in detecting marked differences in the character of the capillary circulation, after the injection of any of these soluble salts beneath the integuments at any part of the body; the details of these observations will be presented in more matured form in my next communication. The few illustrations already adduced will be received as adequate to the esta-

blishment of the general fact, that agents which attain, undecomposed, the channel of the circulation, produce their characteristic effects, either by the formation of a definite compound with some of the proximate elements of the blood, or by their mechanical presence and influence in their insulated transit through the system. In the vegetable kingdom, numerous genera and orders of plants are found, of which the mode or principle of operation is so uniform and unvarying, that the active principle of each group may be stated to possess a definite relation to some one element or system in the organism. It is from this circumstance that the system of botanicaal classification first propounded by Jussieu, derives its most philosophic confirmation. The genera of the orders apocynaceæ, to which the upas, woorala and strychnine poisons belong, are as uniformly distinguished by the terrific rapidity and virulence of their operation, as those of the ranunculaceæ by their acridity and bitterness, or those of the genus papaver by the narcotism which attends their agency. In extending our survey further into the details of the subjects of which an imperfect outline only has here been offered, and regulating each succeeding step on the plain principles of physiology, the laws which determine the mode of an agent's operation upon the living system may be made to assume a character of considerable precision. From the preceding considerations, it appears to me that the method best calculated to conduct to useful and definite results in the study of this interesting but complex subject, should consist, firstly, in ascertaining the nature of the changes which substances undergo by contact with the contents and walls of the stomach and intestines; secondly, to determine the character and properties of the compounds formed by the combination of these agents with the elements of the blood, and the effects of these nascent combinations upon the several systems of the organism; and thirdly, to investigate the operation of agents upon the several departments of the nervous system—the cerebral, spinal, and sympathetic—by insulating, as far as practicable, each, for the purpose of experiment and observation, according, that is, to the plan recently so lucidly and masterly laid open by Dr. Marshall Hall.

Preparatory to further inquiry, it may be allowed me, in connection with this communication, to state the result of an experiment which recently suggested itself while investigating the subject of branchial respiration. In the breathing apparatus of the fish, two fluids are concerned, of different densities, and impregnated with different gases, on either side of the capillary parietes; on the internal, the blood charged with carbonic acid; on the external, the surrounding element holding in solution atmospheric air. On the well established principle of gaseous diffusion, notwithstanding the presence of a membranous septum, it will be admitted that the centric and eccentric currents of carbonic acid and oxygen, proceed in obedience to the law of which the expression is, that the diffusive power of a gas is inversely proportional to the square root of its density. But let it be conceived, that the more liquid portions of the blood, and the external water respectively, pass in intercrossing directions, into and from the vessels, would not the endosmotic forces of liquids oppose or modify the tendency to diffusion in the gases which respectively they held in solution? To determine this doubt, I contrived the following experiment. If, as indicated in the



annexed diagram, the small vessel *a*, be filled with *sugar-water*, which has been shewn by Dutrochet to be capable of producing an endosmotic current, with a comparative velocity of  $17^\circ$ , be impregnated with a small volume *a*, of atmospheric air, and properly adjusted upon a stand in the larger vessel *B*, the former being inverted, so that the interposed septum may be the lowermost part, and the vessel *B* filled with water charged with carbonic acid *b''*. I have succeeded in determining, first, that the superior force with which the sugar water is impelled in an eccentric direction, does not communicate a corresponding endosmotic velocity to the air with which it is impregnated; that, secondly, the centric current of the carbonic acid is not affected or neutralised by the opposing stream of the sugar-water, nor does the carbonic acid appear to impart any of its centripetal tendency to the water in which it is dissolved. In these observations it was

calculated that the endosmotic properties of carbonic acid and air are as 30 to 17. These numbers nearly correspond to the diffusive velocities of the gases. I am not aware that this double current has before been introduced into the principles of endosmosis. I do not announce this result as conclusively established, for upon a subject so involved by sources of fallacies, repetition and unusual care are the only guarantees of accuracy. On a subsequent occasion I hope to show that this, which appears to me as a new fact on the subject, will have an important application to the question of imbibition, and other properties of organic membrane.

9, Maze Pond, Borough.

#### CASE OF

### SPONTANEOUS PERFORATION OF THE STOMACH;

WITH OBSERVATIONS ON THESE AFFECTIONS GENERALLY.

BY JAMES B. THOMPSON, A.B. M.D. &c.\*

(For the Medical Gazette.)

MARIA MARTIN, ætat. 26, unmarried, of nervous temperament, previous good general health, and of very active habits, had never complained of any gastric derangement, and had been regular the previous month, was, when in the act of putting on her stays, suddenly seized with an acute pain in the region of the epigastrium: this was at eight o'clock A.M., and continued to increase hourly. Dr. Thompson visited her at 12, noon, and found her then labouring under the most acute, and seemingly excruciating pain, which she from her own account attributed to the stomach; and pointed out one part in particular, about an inch and a half to the left of the ziphoid cartilage. Leeches were at once directed to be applied to this part, and afterwards the cupping-glasses to be had recourse to, and the bleeding to be freely encouraged by stuping, and bran poultices, occasionally returning to camomile and poppy stupes, with some laudanum added to these. A hip-bath was afterwards directed, and the patient to remain in it for twenty minutes, when she was removed into bed,

and got an active aperient draught, followed by a sedative with morphia. The leeches, cupping, stupes, and bath, seemed to afford her very considerable relief; and the draught had operated twice during the day, after which she had some undisturbed sleep for about an hour and a half. The pain, however, returned again at 11 o'clock that night, and seemed to be considerably aggravated, and to occupy the greater part of the abdomen. She had been again visited at 2 o'clock A.M. next morning, when she was evidently rapidly sinking, and approaching to the comatose state. It was then for the first time that this patient's case was considered one of that nature under which it is here headed—namely, a spontaneous rupture of the coats of the stomach, and that the diffuse peritoneal inflammation then present was consequent on the extravasation of the fluid contents of the stomach into the peritoneal sac. She gradually got worse, notwithstanding every thing that could suggest itself being done for her, and died in or about thirty-five hours from the commencement of her attack.

There was some difficulty in getting the friends to admit of a post-mortem examination; however, they were persuaded to allow it; and in doing so, twenty-two hours after death, the following remarks were at the time noted down:—In the outward appearance of the stomach there was nothing to attract notice; but in opening it there was presented a generally inflamed surface; and on closely examining its parietes, there was found in the lesser curvature a somewhat oval opening in the mucous membrane. The submucous coat was also similarly perforated; but the opening in the serous coat was not observable on the outer surface at first sight: it was only to be recognised (unless very minutely inspected) by passing a probe from the opening in the mucous coat. It was a somewhat oblique slit, not exactly corresponding to the opening in the inner coats, which was somewhat oval, and presented the appearance as if "punched" through. There was near a pint of the fluid contents of the stomach in the peritoneal sac, which presented a very general and diffuse appearance of inflammatory action having previously existed. There was no further exami-

\* Read before the Medical Society of London.

nation of the body allowed, owing to the great anxiety of the friends, but this young woman seemed to be in every other respect a very generally healthy subject.

**OBSERVATIONS.**—The foregoing case is an instance of a very peculiar form of disease, and which seems to be confined to a point, and terminates in ulceration. The period of time varies from twelve to thirty-six hours, which was near about the time at which this case proved fatal. We hardly ever have an opportunity of seeing the stomach when this affection is commencing. Some are of opinion that it does not prove fatal during the early or inflammatory stage, as would appear to have been the case in the present instance. The ulcer itself does not often destroy life, but it permits the fluid contents of the stomach to pass into the peritoneum; and then it is the resulting peritonitis that proves so fatal. The ulcers in these cases are generally of various sizes, varying from the size of a sixpence, as was the case in this instance, to that of a half-crown piece. In the more chronic cases the ulcers are likely to be larger and better defined about the margin of the ulcerated part. They invariably are oval-shaped, or somewhat rounded, particularly on the mucous coats, and would present in the more recent cases the appearance already alluded to—namely, “punched out.” There is another remark which is generally noticed, and was observed in the preceding case; that is, that ulceration is mostly noticed in or about the lesser curvature, mostly on its posterior inferior surface.

It has been stated that these ulcerations are of a cancerous nature: but the author of the paper apprehends this must be a mistaken notion, and one that is contra-indicated by our present knowledge of cancerous affections generally; such cases as the foregoing, occurring most frequently in persons in the prime of life, and who have had no symptom of cancer about them. Besides, it is now very generally admitted, that cancerous affections are more frequently observed to occur in, and at, a later period of life. There is not that indurated feel, either, in the neighbourhood of these ulcerations, which the writer has noticed, and is so common and general an indication of the disease of cancer. The appearance

of the ulcer and its general history ought, in the author's opinion, to be a sufficient proof that it first had its origin in the mucous coat of the stomach, and not, as is invariably the case, in scirrhus affections in the sub-mucous tissue. Besides, there is more of the mucous coat destroyed in these cases than of any other membrane or tissue. The symptoms of these affections are at first rather obscure. In very many cases the general health appears good; often no complaint is made till some short time before death, when a most painful and violent train of symptoms present themselves. It would also appear, that the nerves and muscular coats are engaged at the same time with the mucous coat, and that it is only when the serous coat becomes engaged, that the symptoms just mentioned generally exhibit themselves. Then, either the peritoneal coat bursts, or rather *gives way*, and the contents of the stomach becomes extravasated, and a fatal peritonitis will ensue, or perhaps a degree of inflammation may be produced in a small portion of the peritoneum, which the ulcer has extended to, but not as yet destroyed; lymph is thrown out, and adhesions take place between that particular part and some adjoining viscus, and it is thus that life may be preserved for the time being. There is a remarkable case of this kind on record—that of the distinguished anatomist, Beclard. He died of a disease of the brain, and there was a cicatrized appearance observed about the lesser curvature, half an inch from the cardiac orifice; it was about the size of a shilling, its surface depressed and traversed by bands, one of which passed across the centre, and divided it into two lacunæ, whose base rested on the peritoneal coat. Recamier makes mention of a case in which the pancreas formed the base of a cicatrized ulcer of the stomach: the patient had died of another complaint. Cruveilhier, and others, do not consider such cicatrices of very rare occurrence.

Usually, however, the ulcer in these affections destroys life in one of three ways:—1st. By gradually exhausting the patient's strength, by pain, vomiting, and so forth, frequently aided by disease of the intestines, liver, spleen, or pancreas, with perhaps occasional dropsy: 2nd, by hæmorrhage, which is either the result of slow and often re-



peated oozings of blood from the ulcer, or may be more sudden from a large vessel, which the ulcer eventually opens; 3d, by the more quick and violent death which follows perforation of the stomach, and the consequent extravasation of its contents into the sac of the peritoneum.

In these suddenly fatal cases, the patient may be taken off in from *eight* to *twelve* hours, that is, before the inflammation has had time to have set in fully, and simply from the shock which the nervous system had sustained, and from which it cannot afterwards rally: this may be witnessed every day in the large public institutions of this great metropolis: in all cases of severe or extensive scalds or burns, or other similar very serious lesions or injuries; or a violent peritonitis, perhaps at first circumscribed, but soon becomes diffuse, and puts a period to the earthly career of the poor patient, in from twenty-four to thirty-six hours.

The diagnosis of ulceration is most difficult. Indeed, it appears to the author, that as yet we have not any pathognomonic symptom whereby we could distinguish this disease from other affections, such as gastrodynia, scirrhus, functional dyspepsia, chronic ulceration, or chronic inflammation. There is mostly vomiting and irritability of the stomach, but it has been seen without these. There is often pyrosis, and it also is often absent. In some cases a wasting of the flesh is remarked, but in others the "embonpoint" is retained. It would appear that persons remained in apparently perfect health up to the moment at which the ulcer gave way. Dr. Abercrombie gives a case of this kind, and another case is recorded in one of the Dublin Journals, of a young lady who went to church in excellent health, had never complained of any gastric disturbance, but was suddenly seized, while in church, with the symptoms of effusion into the peritoneal sac, and expired in thirty-six hours. The post-mortem, in this case, showed a perforating ulcer, with effusion and peritonitis. A circumscribed inflammation, which is perhaps more dangerous than a diffused one, because more apt to be followed by ulceration, may have only slight dyspeptic symptoms, or may even escape notice altogether, until the ulcer has perforated the stomach,

and then be followed by the fatal peritoneal inflammation. In the more chronic forms of these affections, the mucous membrane seems thickened, its papillæ considerably developed; the degree of redness varies in shades of colour from a dusky brown to a somewhat livid or leaden hue, often on detached surfaces or patches, here and there, where it would appear that ulceration would at some future period take place. A very interesting discussion followed the reading of this paper, after which the thanks of the society were voted to the author for his very comprehensive and practical paper. The society then adjourned to the 21st instant.

#### CASE OF HEMERALOPIA.

*To the Editor of the Medical Gazette.*

SIR,

If you think the following case worthy of notice, perhaps you will insert it in the MEDICAL GAZETTE.—I am, sir,

Your obedient servant,

J. THORNTON.

Holt, March 14th, 1842.

J. M., æt. 17, a healthy agricultural labourer, was attacked with hemeralopia last March. Vision was indistinct after sunset for a few days, gradually becoming more impaired, until total night-blindness ensued. His sight returned daily at sunrise, when he went out to his labour until the evening. During the blindness the pupils were much dilated, and uninfluenced by artificial light. He was blistered, and took alternate doses of mercury, with saline purgatives, for a period of five weeks, when his sight was perfectly restored, and has since continued perfect.

Night blindness is, I believe, rare in this country. It is not uncommon within the tropics, particularly in the region of calms about the equator, where the sea sometimes looks like glass for two or three weeks together, and reflects a vertical sun with great intensity. At these times sailors sleep on deck during their night watch, and hence the supposition that the moon strikes them blind.

The pathology of the complaint does not seem to be well understood. Is it a morbid condition of the retina from



congestion, or is it merely a periodical state of complete rest or insensibility, as a result of exposure to intense light? for the patients do not suffer any uneasiness, and their eyes are quite uninfluenced by bright artificial light.

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## MEDICAL GAZETTE.

Friday, April 8, 1842.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in ablicum sit, dicendi periculum non recuso.”

CICERO.

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### REMUNERATION OF PRACTITIONERS.

THE study of medicine is undoubtedly one of the noblest and most interesting subjects that can engage the mind; and its practice being essentially devoted to the alleviation of human suffering, and to the promotion of the general welfare, brings with it the highest satisfaction and pleasure. The practitioner is engaged in a work of universal beneficence, by which he becomes a friend to all; and on this account he may be regarded with a feeling of envy by those who view only this the bright side of the picture. But unfortunately these feelings of mental enjoyment, this consciousness of the utility of his avocation, can of themselves by no means supply the requisite *pabulum vitæ*, neither can they “cloy the hungry edge of appetite,” nor meet those demands upon his purse to which the medical attendant is necessarily subject. To these higher motives to energy and action, he, as well as those engaged in other pursuits, must add a mercenary view; and not only that, but he is obliged to use his utmost diligence to secure a fair and proper return for his services. It might have been supposed that to one thus engaged in forwarding the best interests of the community such a return would always be willingly tendered: a very little observation, however, shews

that this is by no means the case. The invalid just recovering from severe and dangerous sickness, is, perhaps, full of gratitude to the medical attendant, regarding him as the means of his restoration; but this short period of thankfulness past, all his good services are forgotten; the Christmas bill being regarded with horror, and paid with reluctance.

Herein, we are aware, consists one of the evils of the present system of dispensing practice, that it postpones the period of payment: still, in spite of this and other arguments adduced in opposition to it, we are inclined to esteem it, in a pecuniary point of view, as the method under which the practitioner derives a fuller emolument from certain classes of the community than he would obtain under any of the recently suggested schemes. The desire of having a *quid pro quo*, that strong propensity of the human character, is too powerful to be overcome by any ordinary reasoning, and must therefore be acceded to by the practitioner who looks to the lucrative end of his profession. The general mass of society are not content unless they receive some visible return for their money, and they estimate the ratio of their payment to the doctor, not by the assiduity of his attendance, or the skill he has manifested, so much as by the amount of medicine they have received. It is frequently suggested that, by this system, the profession is degraded, and that medical men, by thus dispensing drugs, lower themselves to an equality with tradesmen: it is, in fact, regarded by many as the great scandal of medicine. That this accusation does not hold good, is shown by the fact, that respectable practitioners are every where looked up to and esteemed; they maintain their proper level among the professional and scientific men of the place, and are admitted into society with them. Where this is not the case, and they

are placed below their proper position, we must not accuse the general system under which all act, but rather the mode in which it is in some instances carried out. If, for instance, the medical man, departing from his proper sphere, condescends to enter into competition with the retail druggist, or endeavours to gain practice by ungentlemanly rivalry with his brother practitioners, we cannot be surprised that he should meet with disrespect in the eyes of the world, or that he should, by this means, invoke an evil name on the whole class. We can call to mind instances in which medical men, more especially in country towns, suffer much from the low and disreputable practices of their brethren, who, by the sale of medicines at cheap prices draw away large numbers of patients. These, and other instances of a similar nature, are faults in the individual, not in the system; and we fear, whatever arrangements or alterations may be made, that opportunities will never be wanting for such black sheep to show themselves, and bring opprobrium on the profession at large.

The often-advocated plan of receiving fees for visits, instead of being paid for medicines, would, we grant, remove much that is disagreeable, and many opportunities of abuse; but at the same time it would also remove a great source of medical emolument. If brought into operation it would, we think, on this account, necessitate the retirement of many from the profession. Except in urgent cases the visits of the practitioner would be dispensed with; and often, in time of illness, would the prescription he had recommended on a previous similar occasion be again had recourse to, without incurring the additional expense of consulting him in person.

It has been proposed to affix certain standard prices to medicines, and with this view have been lately proposed

scales of charges for pills, draughts, &c. This system appears to possess scarcely any advantage, barely even to remove an abuse, the quantity of medicine to be sent being still necessarily left at the option of the practitioner, while it is open to many evident objections, which we have already alluded to in a previous number of our journal.

In Sir Robert Peel's new tariff it is proposed to reduce the duty on drugs, in some instances very considerably, especially on those which are the produce of our own colonies. It may, perhaps, be anticipated from this, that the charges of the practitioner for his dispensed medicines will fall in an equal ratio. This is by no means to be expected; the value of the drug as an article of commerce bears very little relation to the charge made for it as a prescription; the medicine is merely a medium by which remuneration is made for the time, the skill, and the labour of the medical man. As well might the lawyer be expected to diminish his fees on account of a reduction in the price of paper, pen, and ink, as the medical practitioner to lower his charges because the duty on drugs is diminished. We are indeed inclined to question the advantage of a cheaper sale of drugs to the public, inasmuch as it is likely to lead to their more indiscriminate administration; but we do not propose now to enter further upon that topic.

The economizing plans which the governments of the day, whether from necessity or not, have recently adopted, press upon no class more heavily than the medical practitioner. We may say with truth that their services in public appointments are less liberally repaid than those of any other persons. Their duties are highly important—their qualifications must be commensurate; their anxiety is great and harassing—their labour and assiduity require to be constant; and yet what a poor remuneration

ration do they receive for their services when paid by public authorities! The inadequate manner in which they are requited under the present poor law system is notorious. The ruling principle of that system is, by contract to reduce every thing to the lowest possible mart—a principle which is followed up by the guardians to its greatest extent, when the lives and health of the paupers under their charge are the subject of treaty. Taking advantage of the overstocked condition of the profession, and the all-compulsory threat of inviting from other places fresh men who may intrude upon the ground of the already existing practitioners, they bring the latter to their own terms, and force upon them the duties of a pauper practice, at a premium barely repaying the expenses necessarily incurred for drugs. In some cases it is totally inadequate even for that: as an instance, we need only allude to the advertisement inserted by a correspondent in a recent number of our journal, according to which, a medical officer was required to take charge of part of the North District of the Lincoln Union, including no less than fourteen parishes; the contract to include all necessary attendances in midwifery and surgical cases, with “all appliances and means to boot”—the salary for all this labour and attendance being the noble sum of £25. per annum.

We must not, however, omit to mention our satisfaction at finding some amelioration, in this respect, in the schedule recently issued by the Poor Law Commissioners, of which a notice was given in last week's *GAZETTE*, and in which we hope we may trace a glimmering of better things to come. Surgical operations and the treatment of fractures are made the subjects of separate and more liberal payment. A proviso is added with regard to surgical operations; but confining the payment

to those cases in which the patient survives thirty-six hours, which is, perhaps, objectionable, as it makes the surgeon's remuneration to depend rather too much upon the chances of life and death; besides which the difficulty and anxiety to the practitioner is usually greater in those cases which terminate fatally than in those which have a more favourable result. The attendant in midwifery is to obtain remuneration at the rate of from ten to twenty shillings in each case, and in difficult labours he is to receive £2, as the board of Guardians may determine. The last is a very important addition, as the attendance on midwifery forms a serious and heavy part of pauper practice, and is one which necessarily occupies much of the practitioner's time. We gladly welcome these concessions on the part of the commissioners, which we hope will before long be followed by a more liberal and general scheme for the remuneration of medical attendance.

#### PROPOSED CHANGES IN THE COLLEGE OF PHYSICIANS.

It has been stated in some of the public papers, that the constitution of the College of Physicians, according to the proposed new charter, is to remain as at present with respect to Fellows and Licentiates. We are happy in being able to state that this is incorrect, and that all who enter the College are to become “Members;” by whom and from among whom the Fellows are to be chosen. This is the kind of change we have often advocated in the *MEDICAL GAZETTE*; embracing, as it does, the abolition of the obnoxious appellation of “Licentiate,” and giving to all certain rights and privileges as *bona fide* Members of the Corporation.

#### FATAL QUACKERY.

*To the Editor of the Medical Gazette.*

SIR,

KNOWING the interest you have always shewn for the purpose of advancing medical reform and suppressing quackery, induces me to send you the following case for inser-

tion in some future number of your valuable Gazette.—I am, sir,

Yours truly,

JOHN MOYLE, Surgeon, &c.

Chacewater, Cornwall, March 18, 1842.

On Tuesday, the 1st inst., I was requested to visit Richard Bastian, a young man about 21 years of age, who, I was informed, had been unwell five or six weeks without seeking medical aid. On entering his bed-room, the cause of disease appeared to arise from the excessive or improper use of mercury, for a more intolerable stench (mercurial fortor) never assailed my olfactory nerves in any venereal ward.

He gave the following history of himself. Six weeks previously, and whilst enjoying his usual good health, he contracted gonorrhoea, for the cure of which he applied to a man called Wilkins (who had been a soldier, and who, I understand, has an extensive venereal practice), who gave him eight powders, four white and four yellow (I did not see them), with directions for taking them at stated intervals. In a short time his mouth became sore, and discharged abundantly for more than five weeks, when his friends became alarmed at what they considered to be a new train of symptoms, viz., sore throat and a rash, which led them to suppose he had scarlatina, but which proved to be ulcerated sore throat (with loss of hearing) and eczema mercuriale, for which his surgeon ordered him a light tonic and aperient.

I found him in the following state:—The countenance fallen, and expressive of mental misery; respiration hurried and deep; pulse small and quick; great depression of strength and spirits, with occasional fainting; pain of the stomach and bowels, with nausea and vomiting of a greenish-coloured fluid, diarrhoea and dysuria, the gums dark coloured and swollen.

Prescribed opiate and cordial medicines, with chloruret of soda gargle.

4th.—Countenance sunken and anxious; head constantly moving; talks incoherently; pulse very small and quick; respiration rapid; cough short, dry, and frequent; diarrhoea, lower gum and lip (which is perforated) sphacelated to the size of half a crown.

Continue the medicines and gargle; wine and water for drink.

He continued to sink until the evening of the 5th, when death put a period to his sufferings.

The quack, not satisfied with prescribing mercury internally for the cure of his gonorrhoea, recommended the application of Ung. Hyd. fort. to the scrotum (which was thickly plastered), and at least 3vj. of which I had taken from his pocket after death.

It was my intention to have had an inquest held on the body, and I wrote the

Coroner to that effect; but because the case did not amount to "*felony! but a high misdemeanor, the coroner would be overstepping the limits of his authority.*"

I cannot understand how a coroner in Cornwall has not the power to hold an inquest under such circumstances, whilst coroners in the eastern counties frequently hold inquests on the bodies of persons supposed to have died from the effects of Morrison's pills and other quack nostrums; or why, if legally qualified and eminent medical men are to be brought before metropolitan coroners' courts for *supposed* acts of mala-praxis (vide *MED. GAZ.* vol. ii. p. 875, 1839-40), a provincial coroner has not the power of holding an inquest on such a case as this.

This is the second case of cancrum oris terminating fatally from the effects of mercury, which has come under my notice within a short time; the first occurring in a female child a year and a half old, erroneously supposed (by a druggist who gave the medicine) to have had gonorrhoea.

## ATTENDANCE ON PAUPERS.

*To the Editor of the Medical Gazette.*

SIR,

I beg to enclose you a copy of a letter addressed by me to the Poor-Law Commissioners; with their reply, which you may insert or reject as you think proper.

Your obedient servant,

CHARLES COTTON.

Lynn, 5th April, 1842.

King's Lynn, 25th March, 1842.

*To the Honourable the Poor-Law Commissioners.*

GENTLEMEN,

I shall be much obliged by your informing me whether the treatment of fractures of the long bones, and dislocations, occurring in the Union house, are to be considered as operations, and, therefore, according to explanatory remarks upon article 10, not to be entitled to remuneration.

The injustice done under article 10, numbers 1, 2, and 3, to gentlemen holding the appointment of medical officers to the Union house, does appear to me most unfair; and it surely cannot be intended to make that injustice more oppressive by considering injuries embraced by numbers 4, 5, 6, and 7, of same article, as coming under the same class of objections and remuneration as those of numbers 1, 2, and 3.

Assuming the existence of hospitals and infirmaries throughout the country equal, and the governors of such institutions willing, to receive "patients who can be removed to the workhouse," or who "have long been subjects of treatment in the workhouse," nevertheless, severe accidents occurring in the Union house, requiring the skill and

most diligent attention of the surgeon, and "which cannot be sent to a public hospital" "with safety and propriety," are to be excluded from the rates of payment fixed "to secure proper attendance and medicine," and the poor unfortunate inmate to be deprived of the advice of an additional surgeon or physician, which is considered so necessary in the case of an out-door pauper, whilst a premium is offered to the surgeon having the charge of the out-door districts to endeavour to prevent cases of an extreme nature being sent to the hospital, where you say "paupers should enjoy the practised skill and combined judgment of the medical men usually connected with such establishments."—I have the honour to be,

Your very obedient humble servant,

CHARLES COTTON,  
Surgeon to the Workhouse and Infirmary, the  
Gaol, and one of the Surgeons of the West  
Norfolk and Lynn Hospital.

Poor-Law Commission Office, Somerset House,  
4th April, 1842.

#### *Medical Relief.*

SIR,

I AM directed by the Poor-Law Commissioners to acknowledge the receipt of your letter of the 15th ult., on the subject of the operation of the new medical order recently issued by the Commissioners, and I am to state that your observations shall receive the consideration of the Commissioners.

I have the honour to be, sir,

Your most obedient servant,

E. CHADWICK, Secretary.

Charles Cotton, Esq., Surgeon,  
King's Lynn.

#### CIRCULATION IN BRAIN.

*To the Editor of the Medical Gazette.*

SIR,

MY attention is directed by Mr. Bell, of Barrhead, to the experiments of Dr. Kellie, of Leith, on the circulation of the brain, which he thinks are opposed to views advanced in a paper on the effect of shocks on the head, inserted in your journal of the 25th of last month. I was not a stranger to these experiments, and I cannot see how they are in the least inconsistent with my views, nor has Mr. Bell been kind enough to point out how they are so; there is, therefore, need of no defence, for there has been no attack.

In the communication alluded to, the belief was expressed that aeronauts do not experience vertigo and many other symptoms, to which those ascending high mountains are liable; proving that some shock, to which the latter are exposed and the former not, is necessary for their production. It is gratifying to find a confirmation of the above statement in Dr. Holland's interesting

and instructive Medical Notes and Reflections. He says, "the observations in ascent by balloons show, even unexpectedly in degree, the extent to which the body can undergo the most sudden changes of atmospheric weight, without any very obvious effect, where the health is unimpaired, and no causes of bodily fatigue are conjoined." For "no causes of bodily fatigue," I would substitute the word *shocks*. Mr. Green, the celebrated aeronaut, expressly mentioned to Dr. Holland, that in "no instance have his companions experienced vertigo or sickness;" and yet Mr. Green and his companion Mr. Bush, attained the height of 27,136 feet, or 5 $\frac{1}{4}$  miles, at which the barometer stood at 11 inches, indicating little more than one-third of the ordinary atmospheric pressure at the level of the sea.

In considering the effects of diminished atmospheric pressure upon the brain, we must not forget the elastic form of vapour, which might arise from the surface of the brain, and which, supposing its temperature at 98°, would be equal to 1.7 inches of mercury; so that the pressure upon the brain when the barometer stood at 11, would be 9.3 inches only; a pressure, one would think, easily overcome by suddenly communicating momentum to the brain, or suddenly arresting it.

It is hardly necessary to say, that the brain feels the direct effect of atmospheric pressure whenever blood-vessels or nerves escape from the skull; that is, whenever there is absence of bone, and that this pressure is diffused unimpaired throughout its whole mass, causing the surface of the brain to press upon the dura mater with a force equal to 15lbs. to the square inch under ordinary barometrical conditions.—I have the honour to be

Your obedient servant,

THOS. HAWORTH, M.D.

Bolton, March 23, 1842.

#### ON PROSTITUTION IN THE CITY OF LYONS.

AMONG the causes of the frequency of prostitution and syphilis at Lyons, Dr. Potton particularly insists on the increase of population, which has chiefly taken place in the working classes. There are nearly 200,000 inhabitants in Lyons; of these, the working classes amount to 90,000. They are all young, most of them unmarried; and there are six women to five men, while it is proved that celibacy and prostitution keep an equal pace together.

The political disturbances which have agitated Lyons, and produced such frequent stoppages of work, the lowering of wages, which has especially affected the women, and inclined them to prostitution as a means of existence; distress, in short, has brought many of the prostitutes of Lyons to their



present state. The most usual of the physical causes, according to Dr. Potton, are suffering and hunger; of the moral causes, the most general are, the obliteration of family feelings, the want of religious ideas, inclination to evil, example, and improvidence. He also points out the faulty arrangements, by which working persons of both sexes at Lyons, are placed in the same workshops. The health as well as morals of the public are dreadfully affected by this promiscuous assemblage of the sexes.

Dr. Potton reckons the number of prostitutes in Lyons at 4400, which is about one in 50 of the whole population, or one in 25 of the female portion. Moreover, the author does not include those public prostitutes whose names are registered at the Mayor's, but those only who, not having lost all feeling of modesty, endeavour to conceal their frailty.

In a second part, the author examines the influence of prostitution and syphilis on the health, the habits, the work, and the well-being of the public. He shows that syphilis is injurious to public welfare by its own symptoms, by the morbid phenomena which are its result, by the changes of structure which it produces in the frame, by the disorderly life which accompanies or follows it in the working classes, by the suspension or diminution of work, and by the expenses which it causes.

The third part is devoted to an examination of the state of the charities of Lyons. There is but one establishment at Lyons where syphilitic patients are received, and that is far too small. It can receive only a very limited number of patients, of whom some are maintained at the expense of the town, while others pay for themselves. There are 85 beds, for girls of the town, poor women, and Lyonnese workwomen, sent there by the municipal or departmental authorities; twelve places are reserved for women who pay and enter at their pleasure. There is only one ward, containing from 25 to 30 beds, for men suffering from syphilis, and treated at the expense of the town or the neighbouring departments. An infirmary capable of containing 28 or 30 patients, receives men who pay. Thus, out of 160 places for venereal patients, 110 only are gratuitous, the others being paid for at the rate of 1fr. 25 cents. (one shilling) each daily. The number of beds is too small, and there is also a want of classification. The authorities have forgotten the words of M. de Gérando:—

"The respect due to poverty and misfortune requires us to distinguish between girls who are ill from debauchery, and innocent victims. Morality suffers from their being brought together; and they should be classed according to the greater or less

degree of corruption prevailing among them."

At the *Hospice de l'Antiquaille* at Lyons, this separation does not take place: and prostitutes who have lost all feeling of shame are mingled with unfortunate women, and girls seduced, but not lost beyond all hope.

The *surveillance* exercised by the police is also insufficient. It is only extended over 280 registered girls, a great number of whom entirely escape it. They are visited but once a month, the day and hour being previously fixed; so that the mistress of the house can easily withdraw those who are diseased, and substitute others who have nothing to fear from examination.

In the last part, the author gives his opinions on the means of lessening the ravages of prostitution and syphilis in the city of Lyons. He sets forth a thousand reasons for a radical reform in the employment of the means at the disposal of the police, and demands more serious efforts on the part of the municipal government for the increase and improvement of their charities.

(Abridged from a review of a prize essay by Dr. M. A. Potton, in the *Gazette des Hôpitaux*.)

## SCIRRHUS OF THE PANCREAS.

DR. MOLLAN exhibited the recent parts in this case; they were taken from the body of a man aged seventy-three, who had been admitted into the Whitworth Hospital, on the 28th of the preceding month. He stated, on admission, that he had been for a long time subject to pain in the stomach after eating, and that within the last six or eight months this pain had become severe and of frequent occurrence. He was considerably emaciated. He had tenderness on pressure over the epigastric region, and a tumor was perceptible, also, to the right of the umbilicus. No advantage was derived from any plan of treatment, and the man gradually sunk and died on the preceding Wednesday. About fourteen days before his death he became universally jaundiced, but had no vomiting until two or three days before death. He had been of temperate habits. On examining the stomach it was found distended with dark-coloured fluid, and its mucous coat presented marks of increased vascularity. The seat of the tumor was found to be the pancreas, the head of which appeared to be changed into a scirrhus structure; the termination of the biliary and pancreatic duct was compressed by it; the gall bladder and hepatic ducts were greatly distended with bile of a dark-green colour; there were several tubercles in the substance of the liver, of a white colour and scirrhus structure. — *Dublin Journal of Medical Science*.

A MALTESE MEDICAL JOURNAL

We have received two numbers of a medical journal published at Malta, which has been established about a twelvemonth. It is called *Il Filocamo, Giornale Medico-scientifico e di Educazione*, and appears twice a month. The two numbers before us are of the dates Dec. 16, 1841, and Jan. 15, 1842, each consisting of eight pages quarto. The one of January the 15th contains an article on the treatment of fractures in the civil hospital at Valetta; cases taken from the internal *clinique*; an examination of Clot Bey's work on the Plague; and an extract translated from the American Medical Intelligencer. The following is a table of the fractures treated under the direction of Dr. G. P. Portelli, principal surgeon on the men's side, during 1841:—

	No.	Discharged.		Died.
		Cured.	Under treatm.	
Leg	15	15	-	-
Forearm	13	11	1	1
Clavicle	6	5	1	-
Ribs	5	4	1	-
Thigh	3	2	-	1
Shoulder	1	1	-	-
Patella	1	1	-	-
Parietal bone	1	-	-	1
Total	45	39	3	3

The number for December the 16th contains, among other things, an account of operations for the cure of an inguinal hernia, of a hydrocele, and for the extirpation of an exophthalmos, performed by the pupils in the clinical ward, under the inspection of Professor Galland.

The publication of this journal does credit to our fellow-labourers in Malta. We wish it all possible success.

CARIES OF THE OCCIPITAL BONE.

DR. KIRKPATRICK exhibited a specimen of disease affecting the membranes at the base of the brain, attended with caries of the occipital bone, without any prominent symptoms during life. The patient was a poor woman who had been in many hospitals, and was admitted about a month since into the North Union Workhouse, with a large bed sore on her hip. With this exception she did not complain of anything beyond mere debility, and the treatment was directed to the restoration of her strength, and the cure of the ulcer; she remained, however, in the same state, and after some time she was attacked with occasional vomiting, and complained of pain in the back of her head; she had no paralysis or convulsive motions; she became gradually worse, and died a few days since, without

any prominent symptoms. On examination, the left lobe of the cerebellum was found to adhere closely to the membranes, and the latter were separated from the bone by a quantity of lymph: where the lymph lay in contact with the bone the internal table was eroded to a considerable extent. On examining the internal ear, it was discovered that the membrana tympani was absent, but the ossicula were still in their places, and there was no disease in the mastoid cells.—*Dublin Journal of Medical Science.*

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, April 1, 1842.

J. T. Fletcher.—A. Gillot.—M. A. Jane.—F. Southam.—W. Row.—William Mitchelmore.—J. Pegge.—W. Pocock.—M. Hudson.—P. M. Pope.—J. Dunn.—A. J. Cumming.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, March 26, 1842.

Small Pox	3
Measles	16
Scarlatina	16
Whooping Cough	34
Croup	7
Thrush	2
Diarrhoea	5
Dysentery	2
Cholera	0
Influenza	1
Typhus	77
Erysipelas	2
Syphilis	0
Hydrophobia	0
Diseases of the Brain, Nerves, and Senses	120
Diseases of the Lungs, and other Organs of Respiration	253
Diseases of the Heart and Blood-vessels	14
Diseases of the Stomach, Liver, and other Organs of Digestion	53
Diseases of the Kidneys, &c.	6
Childbed	1
Ovarian Dropsy	0
Disease of Uterus, &c.	2
Rheumatism	1
Diseases of Joints, &c.	1
Ulcer	0
Fistula	0
Diseases of Skin, &c.	0
Diseases of Uncertain Seat	110
Old Age or Natural Decay	52
Deaths by Violence, Privation, or Intemperance	19
Causes not specified	6
Deaths from all Causes	770

NOTICE.

Will the author of Observations on the Statistics of Phthisis favour us with his name, which is inadvertently omitted.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL  
OF

Medicine and the Collateral Sciences.

FRIDAY, APRIL 15, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Diarrhœa. Sporadic Cholera. Epidemic Cholera.*

THE morbid *fluxes* which proceed from the long tract of mucous membrane that lies between the stomach and the anus are many in number: and they vary much, both in kind and in cause. *Hæmorrhages* are not uncommon. I have already described the disease called *melæna*, which is characterized by the discharge of black semifluid matters, resembling tar, from the bowels, and in most instances from the stomach also by vomiting. The matters vomited, and the matters passed by stool, are composed principally of blood, which has been rendered black, and otherwise modified in appearance, during its progress outwards in the one direction and in the other. Again, hæmorrhage from the bowels is apt to occur in *continued fever*; as I shall shew you when we come to that disease. Hæmorrhage takes place also from the rectum in *hæmorrhoids*, or *bleeding piles*: a malady that falls chiefly to the care of the surgeon. Blood comes away too, mixed with a greater or less quantity of mucus, in *dysentery*.

The remaining forms of profluvia from the intestinal canal I shall proceed to consider *seriatim*; at least the most important of them.

*Diarrhœa*.—There are several very different affections classed together under the head of *diarrhœa*: by which term is usually signified the occurrence of frequent, loose, or liquid alvine evacuations. Thus diarrhœa

is a very common symptom of pulmonary phthisis; and this form of the disorder has been already mentioned. It is very often met with also in continued fever, and during the decline of the febrile exanthemata, of which I have yet to speak. But diarrhœa is not unfrequently the main symptom of the disorder under which the patient labours; and constitutes, at any rate, the chief object of our treatment. I shall touch briefly on some of its varieties.

In the first place, there is that common form of the complaint which proceeds from over-repletion of the stomach; or from the ingestion of food that is not wholesome: food that disagrees (as the phrase is) with the patient's stomach and bowels at that particular time. We may call it, with Cullen, by way of distinction, *diarrhœa crapulosa*; in which fæces are discharged in a more liquid state, and more copiously, and more often, than is natural. These cases are in truth slight cases of irritant poisoning. The ingesta irritate the mucous surface, and probably the muscular coat also; the secretions of the inner membrane are poured forth in unusual abundance, and the peristaltic motion of the intestines become more strong and active; the objects of these changes being that of getting rid of the offending substances: a salutary and conservative effort, which we assist and imitate in our *treatment* of this form of diarrhœa.

The symptoms by which this species of diarrhœa is marked, must be well known to us all. There are often nausea; flatulence; griping pains in the bowels, succeeded by stools of unnatural appearance and odour, and of fluid or watery consistence. There are often, also, a furred tongue and a foul breath: but the disorder is attended with little or no fever; the pulse remains of the ordinary frequency; and the temperature of the body does not rise.

There are certain things which, more than others, tend when taken into the stomach to cause this crapulous diarrhœa: and there are

certain circumstances which increase the disposition to be affected by the ordinary exciting causes.

We frequently see this disorder supervene upon a debauch, in which case the *mixture* of various articles of food, and of drink, each of which in itself might have been perfectly innocent—and the actual *quantity* of the mixed ingesta—have occasioned the irritation and disturbance. But where there has been no intemperance in eating or drinking, some kinds of food are more likely than others, *ceteris paribus*, to provoke diarrhoea. I do not speak of idiosyncrasies, which show the truth of the old proverb, that what is one man's food is another man's poison, and which cannot be reckoned upon beforehand; but I refer to the average of systems and stomachs. And among these indigestible and irritating substances we may place *raw vegetables* of many kinds; such as cucumbers and salads, sundry kinds of fruit, especially if they be immature and acid, plums, melons, pine-apples, nuts, and so forth. Mushrooms may be added to the list, even when they are cooked. *Putrid* food, or food which, in the more refined phraseology of gastronomers, is termed *high*, has the same effect upon some persons: and so, in a particular manner, have some kinds of *fish*; shell-fish, crabs, and muscels, for instance, in this country; and in other countries, in the West Indies, there are several species of fish which are actually poisonous, and cannot be safely eaten at all. A similar disorder is frequently produced in children by any sort of food, other than the natural sustenance furnished by the mother. The new kind of nutriment disagrees with them: and the very same thing is apt to occur in adult persons. An article of diet which is perfectly wholesome and digestible, and which the stomach bears well after a little habit, will sometimes cause griping and purging, when it is taken for the first time. It is upon this principle that the diarrhoea to which Englishmen are subject upon their first visiting the towns upon the continent, is to be explained. I do not know that it is so, but I think it very likely that Frenchmen, and Germans, and Italians, suffer in the same way when they first come to this country, and adopt our habits and regimen.

Another curious exciting cause is to be found in certain *mental emotions*, and especially the depressing passions: grief, and, above all, fear. A sudden panic will operate on the bowels of some persons as surely as a black dose, and much more speedily. Among the circumstances which *predispose* most persons to this kind of malady, we may particularly specify *season*—the hot weather of summer and autumn. And it is probably consistent with the experience of

most of you, that the atmosphere of the dissecting-room has a similar tendency.

Now this diarrhoea, from occasional irritation, produced by the presence of substances that offend the stomach or bowels, will generally cease of itself. The purging is the natural way of getting rid of the irritant cause. We may *favour* the recovery by diluent drinks, and by making the patient abstain from all further use of food which is not perfectly easy of digestion; and we may often *accelerate* the recovery by sweeping out the alimentary canal by some safe purgative, and then soothing it by an opiate. Or we may give the aperient and the anodyne together, and the one will not interfere with the operation of the other. A table spoonful of castor oil, with six or eight minims of laudanum dropped upon it: or from fifteen grains to a scruple of powdered rhubarb, with half as much of the *pulvis cretae compositus cum opio*. By some such medication as this, emptying the bowels, and quieting them, the cure is generally accomplished with ease, and speedily:  *tuto, cito et jucunde*.

We sometimes however meet with cases in which diarrhoea *runs on*: the stools being composed of fecal matter in an unnaturally fluid state; and the precise condition on which this disposition to an overloose state of the bowels depends, escaping detection. If the disorder be slight, it will often yield to the astringent and bitter medicines. The infusion of cuscuta, and the tincture of cinnamon, supply a convenient formula. If it be more severe, or obstinate, we have recourse to chalk mixture, which neutralizes acidity; combined with catechu, which is a direct astringent of the tissues; and with laudanum, which calms irritation. And in extreme cases the sulphate of copper has been found to have a powerful effect in restraining the flux. It is apt to gripe, and should be combined therefore with opium. A quarter of a grain of each, in a pill, given three or four times a day, I have frequently found successful, when previous attempts to remove the diarrhoea had failed.

*Sporadic cholera*.—I have alluded to the influence of *hot weather* in predisposing the system to be affected by the exciting causes of diarrhoea. And there is a complaint, of which diarrhoea is one prominent symptom, but which is something more than mere diarrhoea, that shows itself in this country, more or less every autumn, and prevails extensively in some years, as a minor epidemic. It is rightly enough named *cholera*; for it is attended with, and consists mainly of, a remarkable flux of *bile*. Sydenham held that the disease is limited to the month of August; and that bowel affections, with

vomiting, occurring at other times, are not genuine cases of cholera. But this was one of that great man's crotchets. The symptoms that mark this complaint are vomiting and purging of liquid matter, deeply tinged with, and principally composed of, bile; violent pains in the stomach and bowels; cramps of the legs and of the abdominal muscles; a great depression of the vital powers, and a tendency to syncope or collapse.

The attack is generally sudden. At first the contents of the alimentary canal are evacuated; and then a quantity, an enormous quantity sometimes, of a turbid, yellowish, acrid fluid, is expelled with violence both from the bowels, and by vomiting. The patients complain of a burning sensation in the epigastrium. As the vomiting and purging go on, tonic spasms of the lower extremities, and especially of the gastrocnemii, occur; the surface of the belly is drawn up into knots: and after a while, the patient, exhausted by the pain and the spasms, and still more so by the copious discharges, grows cold, and faint. Sometimes actual syncope happens: and sometimes death.

Death, however, is an uncommon event of this form of cholera, in this country.

The chief cause of cholera, such as has now been described, appears to be casual exposure to cold, after a continued high temperature of the atmosphere: and the great irritation of the stomach and bowels evinced by the symptoms, proceeds from the presence of bile in the intestines in undue quantity, and rendered more acrid than usual by some morbid alteration of its quality. The attack seems to be often determined by some of those causes of irritation which I just now mentioned when speaking of simple diarrhoea; and particularly by imprudence in eating and drinking.

I believe that no better treatment can be followed in this disease than that long ago laid down by Sydenham. He observes that any attempt to stop the purging and vomiting by strong drastic aperients, under the notion of expelling the irritant matter, would be like endeavouring to extinguish fire by pouring oil upon it; and that to try to lock up the acrid discharges in the alimentary canal by means of narcotics or astringents, would be equally hurtful. He therefore was accustomed to dilute the contents of the stomach and bowels by emollient drinks, and injections, especially by chicken broth; and so to favour their expulsion: and when any faintness or sign of sinking began to shew itself, to administer laudanum in full doses. We are seldom summoned to these cases in the outset. Generally the vomiting and diarrhoea have continued for some hours before we see the patient; so that it is expedient to give the opiate as soon as we can.

If the stomach be very irritable, solid opium in the form of pill may be preferable to laudanum; or an opiate clyster—or an opiate suppository—may be introduced into the rectum. When the skin is cold, and the pulse sinking or irregular, carbonate of ammonia, or brandy and water, may be given by the mouth; and a mustard poultice, or a bag of hot salt, or a moist and hot flannel sprinkled with oil of turpentine, should be applied to the abdomen. The cramps of the extremities may be relieved by diligent friction with the hand; or some stimulating liniment may be rubbed upon the affected muscles. When the collapse is great, the patient should not be allowed to raise himself out of the horizontal posture, lest fatal syncope should occur. Opium, however, is our sheet-anchor in this complaint: it sustains the flagging powers, while it quiets the gastro-intestinal irritation.

After an attack of severe cholera, the patient is apt to be left extremely feeble; with soreness of the muscles of the trunk and limbs: and sometimes symptoms of inflammation of the mucous membranes will supervene; pain and tenderness of the belly, a white tongue, thirst, and fever. And these symptoms may require some of the remedies of inflammation.

*Epidemic Cholera.*—Such is the disease which had long been familiar to English practitioners, as *cholera*: but between ten and eleven years ago, this country was visited by a severe epidemic disorder, which was also called cholera; or by way of emphasis, *the cholera*; or sometimes *spasmodic cholera*; or *Asiatic cholera*; or *malignant cholera*. The symptoms of this new disease resembled, in some points, those of the old-fashioned cholera: but differed from them in more, and in more important, particulars. So that the application of the term cholera, or cholera morbus, to both these morbid affections, is very much to be regretted, for it has produced a great deal of confusion and inconvenience.

I scarcely know how to name the newer and severer disorder. I have no right to alter the received nomenclature; and choosing from among the many appellations which have been applied to the complaint, that epithet which seems the least objectionable, I may call it *epidemic cholera*: although this term is objectionable, since the other form, the *English or sporadic cholera*, is sometimes also epidemic.

The *epidemic cholera* so far resembled the *sporadic*, that it was attended by profuse vomiting and purging, by extreme prostration of strength, and by cramps. But it differed remarkably in these respects; in the circumstance that the matters ejected from the stomach and bowels contained no bile



(and this alone is a good reason against calling the malady *cholera*); in the early supervention of the symptoms of collapse; and in the great mortality of the disorder.

The amount of the fluid matters thrown up from the stomach and discharged by stool, was really in many cases wonderful. At first, perhaps, the patient would have so copious a stool—a consistent dejection it might be, but so large in quantity—as to lead him to conclude that the whole contents of the intestines had been evacuated at once. Yet soon afterwards a turbid whitish liquid would again and again pour from his bowels in streams; and be spouted from his mouth as if from a pump: not in general with much effort, but easily and abundantly. The matters thus discharged were thin, and for the most part of a whitish colour, like water in which rice has been boiled; without fecal smell; and containing small white albuminous flakes. There were some varieties in the evacuations, but the kind I have mentioned, resembling rice-water, were the most common and the most characteristic: and however *else* their sensible qualities might vary, *this* circumstance was universal, that they contained no *bile*.

With all this there was early sinking, and collapse, as it was called. This term *collapse* expressed a general condition, made up, in the most exquisite cases, of the following particulars:—A remarkable change took place in the circulation, and a striking alteration in the appearance of the patient. The pulse became frequent, *very* small and feeble, and at last, even for hours sometimes, extinct at the wrists. The surface grew cold; and in most, or in many instances, blue as well as cold. The lips were purple; the tongue was of the colour of lead, and sensibly and unpleasantly cold to the touch, like a frog's belly; and the breath could be felt to be cold. With this coldness and blueness there was a manifest shrinking and diminution of the bulk of the body. The eyes appeared sunk deep in their sockets; the cheeks fallen in: in short, the countenance became as withered and ghastly as that of a corpse. The cadaverous aspect that sometimes precedes death in long-standing diseases, would come on in the course of an hour or two in this complaint. If the physician left his patient for half an hour, he found him visibly thinner on his return. The finger nails became blue; the hands and fingers shrivelled, white, corrugated, and sodden, like those of a washer-woman after a long day's work. The skin was bathed in a cold sweat. The voice became husky and faint. So peculiar was this change, that the sound was spoken of as the *vox cholericæ*. These are the symptoms which the single word *collapse* was meant to express.

Another very striking feature of the disorder was the muscular cramp; affecting the muscles of the thighs and calves of the legs, rendering them as hard and rigid as wood; and drawing up into lumps the muscles of the abdomen. These spasmodic contractions were attended with severe pain, and constituted the greater part of the patient's suffering. During the continuance of the symptoms that I have been endeavouring to describe, not a drop of urine was passed or secreted. One man, who was under my own observation and care, and who recovered, did not void a drop of water from Sunday morning till the afternoon of the following Wednesday.

Even in the extreme state of collapse the intellect remained quite clear: the patients would continue to talk rationally to the last moment of their lives; and, for the most part, they seemed singularly indifferent and apathetic about their condition.

In the fatal cases—and a very fearful proportion of the whole number *were* fatal—death took place sometimes in the course of two or three hours; and it was seldom delayed beyond twelve or fifteen. In those that recovered, the favourable symptoms were the cessation of the vomiting, purging, and cramp; the return of the pulse, and of warmth to the surface; the disappearance of the blueness of the skin, and of the hippocratic countenance; the *re-appearance* of bile in the alvine evacuations; and the restoration of the secretion of urine.

The course of the symptoms varied a good deal in different persons. Sometimes the vomiting and purging soon ceased; and sometimes there was neither sickness nor diarrhoea at all, but rapid collapse and sinking. These were thought the most formidable cases. However, the peculiar secretions were *poured forth*, in some, at least, of the instances in which none of them were *ejected from the body*. A patient died of cholera in the Middlesex Hospital without any vomiting or purging: but on examining the dead body, we found the intestines quite full of the rice-water serous fluid. Sometimes the cramps were not very troublesome. The cutaneous blueness was not a universal phenomenon. The patients were in general tormented with thirst: and when attempts were made to bleed them, the blood was found dark and thick, like treacle, and scarcely moving, if moving at all, in the veins: in some cases it could not be made to flow out. Considerable hurry and anxiety of the breathing were also symptoms that I omitted to mention before.

The examination of the dead bodies threw no light, that I know of, upon the nature of this frightful disease. The alimentary canal generally was found to contain a white liquid, having white flakes in it; such as had pre-

viously issued from the bowels: and the mucous glands of the intestines, both the solitary and the agminated, were unusually large and conspicuous. The veins were loaded with thick, black, tar-like blood; and the urinary bladder was always found empty, and contracted into the size of a walnut. Even when the blue colour had existed in a marked degree during life, it often quickly disappeared after death. And another most singular phenomenon was occasionally remarked in the dead body. A quarter, or half an hour, or even longer, after the breathing had ceased, and all other signs of animation had departed, slight, tremulous, spasmodic twitchings and quiverings, and vermicular motions of the muscles, would take place; and even distinct movements of the limbs, in consequence of these spasms.

The disease, of which I have drawn but a faint outline, was not known in this country till the autumn of the year 1831. There are persons, I am aware, who hold that it has always existed among us; only not in such numerous instances as at that period; and they appeal to Morton, and other early writers on the diseases of this country, in support of their opinion. But the malady was too striking to be overlooked, or ever forgotten, by any one who had once seen it. Certainly, till that year I never saw any thing like it. To be sure I had not at that time been very many years in practice here. The late Dr. Babington, however, told me that it was quite new to him. He had, for a very long period, been in extensive practice, in those parts of the metropolis and its vicinity where the epidemic cholera raged most; and when it first came among us he had the curiosity to ask every medical man whom he met, whether he had seen any case of the cholera; and if the answer was "yes," he went on to enquire whether, before that year, the person had ever met with the same complaint; and the reply was always, without a single exception, "no." Yet I say there were, and are, a few practitioners who denied, and deny, that it was any thing more than the common and well-known English complaint raging with unusual frequency and violence.

But we have evidence of a different kind of the newness of the epidemic cholera to these kingdoms. Its approach was discerned afar off, as distinctly as a storm is foreseen by the rising of the clouds from the horizon in the direction of the wind. The disorder began to rage with terrible severity, in India, in the year 1817. I do not mean that it then broke out there for the first time. It had visited those regions again and again before. But from its irruption in the year I have mentioned, when it committed frightful devastation in the armies in the north-

eastern districts of India, its course can be distinctly traced to our own shores; towards which it approached with slow and halting, but with sure steps, in a north-western direction. From India it spread to Persia; and thence to Russia; and across through Poland to Germany: and at length it was found at Hamburgh. It was predicted before that time, that the distemper *would* at length reach Great Britain. Our government had even sent two physicians into Russia to investigate its nature, in the fearful anticipation that its march across the earth would continue progressive; and accordingly, at the expiration of fourteen years, it made its appearance on the *eastern* coast of this country; in Sunderland: and in due time extended over every part of these islands. I say its arrival had been *foreseen* and *foretold*; and it is absurd to suppose that a vast number of persons would fall sick, and die, with symptoms quite strange to the great mass of practitioners here, merely to fulfil this prediction.

The progress of the disorder did not end here. Crossing the Atlantic, it invaded America; turning, at the same time, in a south-easterly direction, it ravaged France and Spain, and the north coast of Africa, and Italy.

Moving thus onward, as it did, in defiance of all natural or artificial barriers, under opposite extremes of temperature and climate, in the teeth of adverse winds, over lofty mountain chains, across wide seas, through "hot, cold, moist, and dry"—in what manner, you will probably ask, was this wasting pestilence *propagated*?

Upon this point various and discordant opinions are entertained. Many persons believe that the complaint spread by contagion: more, however, that it was not contagious at all, but arose from some deleterious cause with which the general atmosphere of the place was pregnant. Now I cannot reconcile the phenomena of the appearance and extension of the malady with either of these hypotheses *exclusively*. It must, I think, be granted, that the complaint, in every instance, was excited by the application of some noxious material to the body, some positive poison. It is certain, also, whichever hypothesis may be chosen, that many more individuals were exposed to the agency of this poison, than were injuriously affected by it. This exemption from the disease no more invalidates the doctrine of contagion, than it invalidates the doctrine of some diffused atmospheric influence: nay, it is more explicable upon the former than upon the latter supposition; for while many may avoid a specific contagion, all are immersed in, and all breathe, the common atmosphere. But the exemption shows *this*; that the exciting cause, to

be effective, required a fit recipient: that the susceptibility of being hurt by the poison in its ordinary dose and intensity varied much in different persons; and in the majority was very faint, or wanting. It is clear that the poison travelled. It is equally clear to my mind, that it was *portable*; and therefore communicable from person to person. I even believe that it was capable of being conveyed, and was actually conveyed, from one spot to another, by persons who were themselves proof against its effects. The innumerable authentic instances of coincidence, in point of time, between the first outbreak of the disorder in a particular place, and the arrival at that place of some person or persons from an infected locality, prove that the poison could be thus carried. Whether the malady was contagious in the same sense in which small-pox is contagious—whether, I mean, the cholera poison had the power of multiplying and reproducing itself in the human body, as yeast multiplies itself during the fermentation of beer—is a different and a much more doubtful question. A disorder may be contagious, without this property of reproduction in the animal fluids. The itch is contagious. The itch is produced by a minute parasitic animalcule, whose existence has, of late years only, been assured to us by the microscope. Suppose that these itch insects could fly, or were capable of being wafted through the air—they would then represent what is conceivable enough of the subtle exciting cause of cholera. Between the two epidemic distempers, influenza and cholera, there were numerous and striking points of similitude or analogy. They have observed the same, or very nearly the same, geographical route. Both, issuing from their cradle in the east, have traversed the northern countries of Europe, till, arriving at its western boundary, they have divided into two great branches; the one proceeding onwards, across the Atlantic, the other turning in a retrograde direction, towards the south and east. The main differences between them have been, that whereas the poison of influenza spared very few of the community, inflicting a disease which, of itself, was seldom fatal—the poison of cholera, on the contrary, smote very few, but with so deadly a stroke that as many sunk beneath it, probably, as recovered. Both were *general* disorders, affecting the whole system, but in both the most prominent of the symptoms had reference, in the majority of cases, to the mucous membranes: to those of the air-passages in the influenza; to those of the alimentary passages in the cholera.

Now this strong analogy has been made use of as an argument that the cholera was not contagious. “The influenza (say the objectors) had no contagious properties;

therefore it is, *a priori*, likely that the cholera had none.” But I demur to the major proposition. Cullen thought the influenza was contagious, and I adverted, in a former lecture, to some facts which favour that belief. Supposing it, however, to be so, the proof of its contagious property must, from the very nature of the case, be extremely difficult. Its visitations are so rapid, widely spread, and multitudinous, that there is no time for its transference from house to house, or from person to person: yet it may be nevertheless transferable. Its inherent rate of locomotion outstrips and precludes the tardier conveyance of the poison by man. Its contagious qualities (granting them to exist) are hidden in its universality, and can seldom be traced but by accident. I therefore esteem this argument from analogy as worthless; and my own creed respecting the cholera is, that it *was* contagious, in the limited sense already explained; but that its contagious power was not very great: that a comparatively small part of the population, of this country at least, was susceptible of its operation; and that few were in much danger of suffering from exposure to the physical cause of the disease, except under circumstances of predisposition. At the same time I believe that a great majority of the cases of cholera were not attributable to direct contagion, but to the poison diffused through the atmosphere. There is nothing inconsistent in the supposition that this noxious matter travelled sometimes by its own peculiar powers, sometimes made use of vehicles.

This, I say, is my creed upon the vexed question of contagion. Respecting the special nature of the poison I can only guess; and my guessing, as you may have perceived, takes the same direction as before. I adverted, when speaking of the influenza, to what Dr. Holland has called “the hypothesis of insect life as a cause of disease.” I shall not repeat the observations I then made; but I would refer you, for much curious thought and information upon the subject, to Dr. Holland’s very interesting essay. The hypothesis in question squares more readily than any other that I know of, with the ascertained history of the disorder: with its origin, after an unusually wet season, in the low marshy country, and hot atmosphere of Bengal; with its irregular but continuous migrations; with its dying away after a while, and its occasional and partial revivals. But still, remember that we are dealing merely with an *hypothesis*.

Whatever obscurity may overhang the *exciting* causes of the epidemic cholera, we are quite sure that certain circumstances exercised a strong *predisposing* influence upon the human body, to render it more

than usually susceptible of the disease. The predisposing causes, as might well be imagined, were such as tended to debilitate the system: and therefore *poverty*, which implies scanty nourishment, and frequently also the confinement of several persons to a narrow space, and want of fresh air; poverty which includes these and other evils, was found to predispose the body to a ready reception of the malady. But to *intemperance*, more than to any other *single* cause, may the proclivity to become affected by this species of cholera be ascribed; and especially to the intemperate and habitual use of distilled spirits. This fact was peculiarly manifested in the selection, by the disease, of its victims in this country; and it has been remarked almost every where else.

I have all along spoken of the visitation of epidemic cholera in the past tense, because, for the last nine or ten years, we have heard but little of it. Yet we can scarcely venture to hope that the stranger pest has altogether forsaken us, for we have had slight sprinklings of the disease in and near London, every summer, I believe, since 1832; but it has never again been extensively prevalent or epidemic. Certainly it dealt lightly, upon the whole, with our country. It was much more general, and more widely fatal, in France, which it visited subsequently to its arriving here: it was very destructive also in its subsequent course, both westward and toward the south-east.

The epidemic cholera made its attack in two different modes. In one it seized upon the patient suddenly, and without warning. This was comparatively rare. Much more commonly the specific symptoms were preceded, for some little time, even for some days perhaps, by diarrhoea. And this I take to be the most important practical fact that was ascertained during its prevalence among us. When the disease was once fairly formed, medicine had very little power over it; but in the preliminary stage of diarrhoea it was easily manageable. Unfortunately people are inclined (especially those classes of the community among whom the cholera most raged) to regard a loose state of the bowels as salutary, and to make no complaint of it, and to do nothing for it; or, in other cases, they conceive it to proceed from some peccant matter within, which requires to be carried off, and they take purgative medicines to get rid of it. Both of these are serious and often fatal mistakes. Mere neglect of the diarrhoea frequently permitted it to run into well-marked and uncontrollable cholera; and the employment of purgatives hastened or ensured that catastrophe. The proper plan of proceeding, I am convinced, was, to arrest the diarrhoea as soon as possible after its commencement, by astringents, aromatics, and

opiates. You may object perhaps that the cases that were cured in this way were not cases of cholera at all, and never would have been; but simple ordinary diarrhoea. It is impossible to *prove* the contrary, no doubt; but the presumption is strong that the diarrhoea would, in many, and perhaps in most instances, have run on, if not checked, into the more perilous form of the disease. In many places, when, taught by experience, the authorities established *diarrhoea dispensaries*, to which those attacked by looseness of the bowels were warned and invited to apply, that the looseness might forthwith be corrected; in many such places the cholera, which had before been cutting the inhabitants off by scores, and hundreds, began instantly to decline in frequency. I venture to advise you, supposing the disease should reappear, or whenever in the autumn a suspicion arises that this form of cholera is present in the community, not to try, in cases of diarrhoea, to carry off the presumed offending matter, but to quiet the irritation, and stop the flux as soon as you can.

But when the regular symptoms, peculiar to the severe form of cholera, had set in, medicine, I repeat, had very little influence upon it: and accordingly, as might have been expected, a hundred different cures of the disease were announced, most of them all but infallible. Some persons held that timely bleeding would save the patient; others relied confidently upon mustard emetics. Hot air baths were manufactured, and sold to a great extent, to meet the apprehended attack in that manner without delay. Certain practitioners maintained that the disease was to be remedied by introducing into the system a large quantity of neutral salts, which were to liquefy and redden the blood, and to restore the functions of the circulation. But of this practice it was said in a sorry but true jest, that, however it might be with pigs or herrings, *salt*ing a patient in cholera was not always the same thing as *curing* him. In a great number of patients the blood was mechanically diluted by pouring warm water, or salt and water, into their veins. Some physicians put their trust in brandy, some in opium, some in cajeput oil, which rose to I know not what price in the market; some, again, in calomel alone.

Now, I would not willingly mislead or deceive you on this point, by speaking with a confidence which I really have no warrant for, of the success or propriety of any of these expedients. I believe that each in some cases did good, or *seemed* to do so; but I cannot doubt that some of them did sometimes also do harm. I had not more than six severe cases under my own charge: and I congratulated myself that the mortality



among them was not greater than the average mortality. Three died, and three (I will not say were cured, but) recovered. The three that died I was called in to see when the disorder was at its height: in each case it went on with frightful rapidity, in spite of all the means adopted, and proved fatal a few hours afterwards. The three that recovered I saw somewhat earlier, but still not till the specific symptoms were present: one was a girl in the hospital. They all recovered under large and repeated doses of calomel. Yet (as I said before) I do not venture to affirm that the calomel cured them. In the first case which was treated in that way, I merely followed up the plan that had been begun by Dr. Latham, who had visited the patient for me when I was accidentally absent. I found that he had felt better, less sick and less faint, after taking half a drachm of calomel at a dose; and I repeated the same dose many times, for after every dose his pulse rose somewhat, and he appeared to rally. This was the same man whom I mentioned before as having made no urine from the Sunday to the Wednesday: all that time he kept discharging rice-water stools. At last, on the fourth day he passed a *little* water, and his alvine evacuations became rather more consistent, and began to look *green*: and from that time he gradually got well. Afterwards I treated my hospital patient in the same way, and with the same event. Yet I will not pretend to say that these persons might not have done quite as well if they had been left entirely to themselves.

Some of the expedients recommended had certainly a very marked and immediate effect upon the condition of the patients, especially the injection of warm water into the veins. Many instances of this were related at the time. One I myself saw. The patient was a young man, who was nearly moribund apparently. His pulse had nearly, if not quite, disappeared from the wrist; he was very blue, and his visage was ghastly and cadaverous: in one word, he was in an extreme state of collapse. Out of this he was brought in a few minutes by injecting warm water into one of the veins in the arm. The pulse again became distinct and full; and he sat up, and looked once more like one alive, and spoke in a strong voice. But he soon relapsed; and a repetition of the injection again rallied him, but not so thoroughly: and in the end he sunk irretrievably. Dr. Babington told me of a patient whom he saw, speechless, and all but dead, and whose veins were injected. He then recovered so as to sit up, and talk, and even joke, with the by-standers: but this amendment did not last either. Yet even this temporary recovery might be sometimes of great importance: might allow a dying man to execute a will, for example. And some

of the persons thus revived got ultimately well. We had for some time a woman in the Middlesex Hospital acting as nurse, who had been rescued, when at the verge of death in cholera, by the injection of her veins.

It was remarked of those who recovered that some got well rapidly, and at once; while others fell into a state of continued fever, which frequently proved fatal some time after the violent and peculiar symptoms had ceased. Some, after the vomiting, and purging, and cramps, had departed, died comatose; *over-drugged* sometimes, it is to be feared, by opium. The rude discipline to which they were subjected might account for some of the cases of fever. And the system of injecting the veins was certainly attended with much danger. The injection of *air* with the water—inflammation of the vein from the violence done to it—an over-repletion and distension of the vessels by the liquid—*might*, any one of them, and sometimes, I suppose, *did*, occasion the death of the patient. Never, certainly, was the artillery of medicine more vigorously plied—never were her troops, regular and volunteer, more meritoriously active. To many patients, no doubt, this busy interference made all the difference between life and death. But if the balance could be fairly struck, and the exact truth ascertained, I question whether we should find that the aggregate mortality from cholera, in this country, was any way disturbed by our craft. Excepting always the cases of preliminary diarrhoea; just as many, though not, perhaps, the very same individuals, would, probably, have survived had no medication whatever been practised.

I do not know that I have any thing more to say that could be of any use to you, in respect to the epidemic cholera.

## NOTES FROM CLINICAL LECTURES,

*Delivered during the present Session,  
at Univers. Coll. Hospital,*

BY C. J. B. WILLIAMS, M.D., F.R.S.  
Professor of the Practice of Medicine,  
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### ON TWENTY-EIGHT CASES OF PHTHISIS— Continued.

*Phtthisis, with purpura, and displacement  
and structural disease of the liver.*

ISABELLA SHAW, *æt.* 70, admitted June 29, on account of an eruption appearing on the legs and arms in numerous purple spots, not removed by pressure, and accompanied with slight tingling, but without papular elevations. This last character distinguished the eruption from lichen lividus. There were besides some ecchymosed patches of large size, and accompanied by some swelling,



from the blood being effused in the cellular texture. These extravasations of blood occurring in several points at once, obviously point to some disease in this fluid. The precise nature of the change is not ascertained, but I have had occasion to remark to you, when commenting on two other cases of purpura which we have had this season, that I have observed purpura to be generally connected with disease or imperfect action of the liver. When we examined the region of the liver in this old woman, we could find no signs of this organ in its usual place. The lower right front of the chest was resonant on percussion, down to the very margins of the ribs, with the deep hollow sound of flaccid emphysema. But in the abdomen, reaching from an inch below the margins of the right ribs to two or three inches below and to the left of the umbilicus, there was a tumor sounding dull on percussion, and offering considerable resistance to the hand. I have no doubt that this was the liver displaced by the emphysematous distension of the lower lobes of the right lung. The thin and flaccid walls of the abdomen enabled us to feel that the surface of this tumor was uneven, with granular prominences; most probably from some degree of cirrhotic deposit in the liver. The bulk of the organ did not seem to be materially changed.

On examining the upper parts of the chest, we found pectoriloquy and cavernous respiration, with unequal dulness of stroke-sound under the clavicles. On further inquiry, it proved that she had an habitual cough, with more or less expectoration, from which she had scarcely been free for several years past. This is another example of that combination which is very usual in old people—chronic tuberculous lesions of the upper lobes, with flaccid emphysema of the lower lobes of the lungs. In a late lecture I explained to you how the latter change must, in many cases, be the result of the former. It is very strange that this very common combination, and its cause, should have been so generally overlooked by pathologists.

The treatment for the purpura was that which you have seen me use successfully in other cases, and it is founded on the fact that the liver is the organ chiefly deranged. Mercurial purgatives and salines, followed by a nitro-muriatic acid mixture, generally suffice to remove the milder forms of purpura. In this case, the age of the patient led me to pass early from the former to the latter remedy. After the purpura had disappeared, the patient was attacked with a very teasing herpetic eruption on the neck and shoulders. This was probably another result of the diseased condition of the blood arising from imperfect action of the excretory organs. You may remember a parallel instance in the formidable case of purpura

which we had at the beginning of the session; the very extensive effusions of blood in the skin and cellular texture were followed by erysipelatous and tubercular inflammations of these parts.

Little was done in the treatment of the chest affection, which was too chronic to need much interference. Henbane was given when the cough was troublesome; and on the occurrence of some increase of chest symptoms, with the removal of the eruption, an antimonial was employed for a few days. This patient left the hospital much improved in strength, and free from all trace of eruption: the cough was much better, but the physical signs were little altered.

*Phthisis, with enlarged spleen and liver.—Bronchitis.*

Samuel Braddon, æt. 36, was admitted Jan. 31, for a great enlargement of the abdomen, which was resisting and dull on percussion from the fifth left rib, down to the iliac region and linea alba. There was dulness also, reaching from the fifth right rib, to nearly as low as the umbilicus; but between these two dull and resisting regions there was a sulcus, sounding tympanitic on percussion, showing the presence of the intestines between two large solid bodies. The form and position of these tumors made it pretty certain that they were caused by enlargements of the spleen and liver. Such enlargements are not unfrequently met with in ague districts as a sequel of intermittent fever; or as an effect of malarious influence, even where regular ague has not occurred. Our patient had not lived in any acknowledged seat of malaria; but he ascribed his complaints to his having, six months ago, worked for a long time as a marble mason in the Temple church, which was very damp and without windows. He then suffered from severe pain in the left side, with a feeling of great chilliness. These symptoms obliged him to give up work, and he was copiously bled and cupped. He became better, and he returned to work in the same place, and again suffered in a similar way, and with swelling of the legs, accompanied by loss of flesh and strength, and his health declined more and more in spite of medical treatment. Since his admission he has also had an habitual cough, consequent on a severe attack of general bronchitis. When he was recovering from this, I found, after repeated examinations of the chest, dulness and rough breath-sound, below the left clavicle, and in the right interscapular region; and these signs have rather increased than diminished. He has also occasional profuse night sweats, and a pulse generally above 90.

For the bronchitis he was treated with antimonials and blistering, which soon relieved him. With the hope of diminishing the hypertrophy of the spleen and liver

small doses of iodide of potassium have been given, with liquor potassæ and sarsaparilla, occasionally varied with a nitro-muriatic mixture when the sweats were profuse. The abdominal swelling has somewhat diminished, but the cough and hectic have become rather more pronounced; and I have no doubt that he will fall a victim to phthisis ere many months are passed.

The combination of phthisis with enlarged liver and spleen has been repeatedly observed; and I need scarcely point out why the latter affections must tend to impair the process of general nutrition, both by drawing away much of its material, and by injuring the structure of organs that are doubtless concerned in preparing or purifying this material.

*Tubercles after Typhus, with congestion of the lungs.*

The case of Daniel Cook, admitted Dec. 14th, has been lately under our consideration as one of typhus complicated with congestion of the lung and liver, from which he recovered, and was discharged cured Jan. 22; but from some dulness of stroke-sound, and prolonged and too loud expiration under the right clavicle, I was led to conclude that some consolidation of a cacoplastic character had been left there. Such results are by no means uncommon after continued fever; induced by the congestion, together with a depraved condition of the blood. I have seen a deposit of miliary tubercles from such a cause entirely confined to the posterior parts of the lungs, these being the most congested, from the posture in which the patient had, for several weeks, lain.

*Pulmonary Tubercles with Epilepsy; Hemoptysis.*

Joseph Scott, æt. forty-one (intemperate, father died of phthisis), was admitted, Sept. 13th, on account of giddiness and slight epileptic symptoms, from which he had lately suffered. He had long been subject to epilepsy. Some weeks before he had been treated in the hospital for profuse hæmoptysis. The cough and chest symptoms were still troublesome, and there was irregular dulness in several parts of the chest, particularly on the right side. He went out, considering himself pretty well, in the beginning of October. His chest symptoms were quiescent, but he still occasionally had epileptic seizures. It is very possible that the cause of the convulsive attacks may have been a tuberculous tumor in the encephalon, probably near the base: epileptic attacks have in other instances been traced to such a cause. Last year we had a case of hemiplegia, in a phthisical subject, which seemed referable to a like lesion. But the circumstances which had lately excited the more frequent operation of this cause in Scott

was, doubtless, the extensive loss of blood which he had lately sustained. It has often been considered inexplicable why tumors and other organic diseases of the encephalon, which are constant and unchangeable, should excite attacks of epilepsy, which are sudden and transitory; but we shall generally find that there is an additional connecting link in the state of the cerebral circulation, which, in the state either of congestion or of determination, brings the constant cause into operation. Now, both congestion and determination of blood in the head are apt to be produced by opposite conditions of the vascular system—that of plethora, and that of sudden inanition; and these are among the circumstances which most commonly excite epileptic attacks.

*Tubercles of the Lungs, with chronic Meningitis.*

The cerebral affection in William Elgood was the most prominent disease; in fact, the tubercles in the lungs, although sufficient to cause irregular dulness on percussion, which had been noted, produced no other symptom than slight cough. The history describes that he had been subject to severe headaches since he was a boy, when he had a fever, with delirium. In the beginning of January, the headaches, which had much increased of late, became so severe as to oblige him to give up work. He was bled, and took medicine, without relief. January 20th his utterance became indistinct: from the 23rd he became somewhat delirious, and remained more or less so afterwards, with intervals of lethargy, in which he tardily and incoherently answered to questions. The pulse on admission (January 28th) was only 78, full and rather sharp: that in the carotid and temporal arteries was remarkably distinct. There were occasional slight twitchings of the left arm. Pupils rather contracted, but answered to light. No paralysis. Slight cough.

The patient was bled and purged, after which he was quieter; but he rapidly lost flesh and strength. The pulse became frequent and feeble; sordes appeared on the teeth and lips, and he lay in a state of partial stupor, with occasional low delirium, until February 2nd, when he died.

*Sectio post-mortem horis xlv.*—Vessels of the meninges generally engorged with blood. Opacity of the arachnoid of both hemispheres, and some recent lymph underneath, chiefly in left parietal region. A considerable quantity of serum at the base of the brain: opacity of the arachnoid, with deposits of yellow lymph in front of the pons varolii. In the fissura Silvii, on the left side, was a deposit of granular lymph: about 3 oz. clear serum in ventricles. Cortical substance dark coloured.

Lungs crepitant throughout, but con-

gested in posterior portions, with some effusion of blood into the tissue of posterior part of left lung. Miliary tubercles in upper lobes of both lungs, and in lower lobe of right lung. Nothing remarkable in other organs.

*Phthisis with various Hysterical or Nervous Symptoms.—Seven Cases.*

We now come to a very numerous class of cases, and one which is particularly deserving of your attention, because these cases are very deceptive, and are rarely understood at a period early enough to give chance of material relief to the more serious disease. You may form some idea of the frequency of their occurrence in the female sex, when you perceive that, out of the eleven phthisical patients in the female ward this winter, seven have been of this disguised or latent description.

In Jane Fearon, æt. 30 (admitted August, discharged relieved October 14th), the chief complaints were emaciation and weakness, with slight evening fever, and occasional night sweats; loss of voice, and superficial tenderness in the left side of the chest and abdomen, without cough, and almost without expectoration. The voice was lost suddenly, and had not been recovered again. She had been subject to hysterical fits. There were also amenorrhœa, and spinal tenderness at the lower cervical and upper dorsal vertebræ: and altogether this bore the aspect of a purely nervous case. But I found distinct dulness below both clavicles, particularly the left, and the expiration was rough and too loud in that situation. This patient was treated with a variety of medicines: the last was tartrate of iron; and galvanic shocks were passed through the larynx October 10th. After two days of this treatment she suddenly recovered her voice.

In Flora Windle, æt. 20 (admitted November 27th, relieved December 15th), the phthisical symptoms were scarcely more pronounced. She was a pale nervous subject, subject to sudden loss of voice, with extreme tenderness of the integuments of the chest and left side. This patient had, however, been subject to a winter cough for five years, and formerly spit blood; and although at present she had scarcely any cough or expectoration, she said she was liable to both when her voice was better. I found partial dulness and tubular respiration under both clavicles, with loud expiration under the left.

She was treated by cupping at first to the painful side; afterwards a stimulating liniment, with Mackintosh covering, to the chest; iodide of potassium and infusion of calumbo internally. The pain in the side was relieved; but the voice was not restored. On December the 11th the larynx

was galvanised; and the next day she suddenly recovered her voice, which she retained on the 15th, when she went out, quite free from cough and expectoration.

Jane Mitcheson, a slight, fresh-coloured young woman, of nervous temperament, was admitted in July for amenorrhœa and severe pain in the left side, with much spinal tenderness, and superficial tenderness of the chest: she also had a slight cough. In my absence she underwent a variety of treatment, including cupping between the shoulders, steel medicines, and the shower-bath. The cupping alone seemed to have benefited her, and that only for a time; and on my return the cough was very troublesome, always excited by percussion of the chest. She had lost flesh, the pulse had become frequent, and night sweats had occasionally occurred. Still the pain and tenderness of the chest and side seemed to be of the exquisite nervous character, and the case might have been considered more hysterical than consumptive. But on examination I found that the right infra-clavicular region was slightly collapsed, and distinctly duller on percussion than the left. Inspiration was indistinct, and expiration too loud under both clavicles. A slight roughness in inspiration, with occasional slight friction sound, was also heard in both supra spinous-fossæ. These signs rather increased on the left side during her further stay in the hospital; and as little relief was given to the symptoms, she was discharged Nov. the 1st.

The case of Louisa Templeman (admitted Nov. 3d, discharged relieved Dec. 30th) has been formerly under our notice. Amongst other complaints there was slight cough and neuralgic tenderness in the chest, chiefly on the left side; and at the apex of this lung we found signs of partial consolidation.

Angelina Williams (æt. 20, fat, and with some colour) had been before she came under my care an inmate of the hospital for some months, with swelling and pain of the knee; and as she had globus and occasional hysterical convulsions, it was considered that her complaints were chiefly nervous, and caused by a suppression of the catamenia. Before I saw her she suffered from severe pain in the left side, with symptoms of gastric dyspepsia, pain and nausea after eating, tenderness of epigastrium, thirst, &c. For a month past she had daily spit more or less blood or bloody fluid without either vomiting or coughing. Generally the blood was only enough to tinge the fluid, which amounted to three or four ounces, and was like saliva, and not frothy; but sometimes the blood was coagulated or fluid, and amounting to an ounce or two. The patient thought that it all came from the stomach, and she denied having the slightest cough: no morbid physical sign had been found in her chest. The pulse generally was about 100.

I first examined the chest on September 14th, and observed less movement and perceptible dulness in the upper part of left side, front, and back : expiration there louder than inspiration : on right side the reverse was the case. From this time I viewed the case to be one of masked phthisis, although it presented many anomalies. The spitting of blood continued in various degrees during her whole stay, until the beginning of Jan. It was not till the end of September that she acknowledged it was attended with any cough ; but after this, the cough, although slight, became more developed, and pellets of mucus, some transparent, some opaque, occasionally appeared in the bloody sputa, which also became less mixed with liquid. The pulse and breathing were always frequent during the visit ; the former ranging from 104 to 120, but when taken quietly in the morning it was found as low as 60. The pain of the left side was never removed ; but sometimes it extended to the chest and right side, and was generally attended with superficial tenderness. In spite of the symptoms, many of which were really distressing, in spite of the constant spitting of blood, in spite of the depletion which was frequently used for the temporary relief which it gave to the symptoms, in spite of the moderate and sometimes low diet, necessary from the occasional gastritic symptoms, this patient never lost flesh, but throughout retained her *embonpoint*, naturally considerable. To look at this patient she appeared anything but consumptive ; yet the physical signs became distinct and unequivocal, first on the left side, and afterwards on the right. In the reports, which were very accurately kept by Messrs. Canney, Leonard, Hare, and Heaton, you will see it stated, from time to time, that various morbid sounds were heard in the upper parts of the chest ; such as length, loudness, roughness, of the expiratory sound ; slight strepitus, between a creaking and crepitation, with expiration ; submucous and subcrepitant rhonchi. The expectoration became less sanguinolent about the end of November ; but it occasionally presented a mixture of muco-purulent matter.

I must refer you to the reports for the treatment pursued in this case. It was much varied, because little effect seemed to ensue from the use of any remedies, except local blood-letting, which always gave temporary relief to the pain in the side and chest. Hot pediluvia, and leeches to the sacrum and thighs, produced no benefit, and counter-irritation gave no ease to the pain, although employed in many forms of rubefacient liniments, blisters kept open, croton-oil, and tartar emetic, pustulating applications, and a large seton to the left side. The quantity of blood in the expectoration, which had been unaffected by acetate of lead, turpentine, mineral acids, alum, sul-

phate of zinc, muriated tincture of iron, and other reputed styptics, became gradually diminished during the use of a turpentine and acetic acid liniment, covered with a piece of India-rubber cloth ; but it never entirely ceased, and I hesitate to ascribe its diminution to this application, and the cough became more troublesome afterwards. The employment of internal remedies was limited by the irritable state of the stomach. Salines, with hydrocyanic acid, and various narcotics, were useful for a short time ; but nothing tonic was borne. The bowels were in an unmanageable state, and required mild doses of hydrarg. c. cretâ, followed by castor oil, or similar aperient, to keep them in action. Towards the end of December a slight diarrhoea occurred, with tenderness of the abdomen. The remedies just mentioned were then used, with Dover's powder ; and there followed an amendment sufficient to enable us to discharge the patient relieved on the 4th of January. The report then is—"Much less pain in the chest, less cough and expectoration of blood, and pulse less frequent ; but none of these symptoms are removed. The catamenia were not restored."

The case of Polixine Cœuret, æt. 17, so closely resembles the last case, that I shall dismiss it in a few words. She was admitted October the 26th for an impetiginous eruption on the face and legs, with gastritic dyspepsia ; these were soon removed : but it was found accidentally that she was daily spitting blood, mixed with masses of opaque muco-purulent matter, yet with very little cough. She had not menstruated for five months ; and stated that she had for that time had a very slight cough, with shortness of breath, and had been getting somewhat thinner, although she was now a stout, well-formed girl, with a quiet, good pulse, and very little appearance of ill health. Soon after her admission, the pelvis was daily galvanised, with the hope of restoring the catamenia ; after this she walked in her sleep, and twice had fits of insensibility, with slight convulsions. The pain in the chest and side was accompanied by tenderness of the surface and of the dorsal vertebræ.

Equivocal as were these general symptoms, the physical signs left no doubt of the existence of considerable disease in the lungs. Dull stroke-sound, tubular breath-sound, with loud expiration, were observed below the right clavicle soon after her admission. Subsequently mucous rhonchus and cavernous breath and voice sounds in the same situation distinctly followed the daily expectoration of clots of opaque, foetid, yellow matter with blood. Dulness and subcrepitation were observed more recently below the left clavicle ; whilst the stroke-sound improved under the right, and cavernous phenomena became less distinct. Many



general symptoms appeared some time after her admission, more in conformity with the diagnosis formed; such as night sweats, more constant cough, breath short, and pulse frequent: yet she never appeared to lose flesh. The expectoration of blood and matter was very much diminished towards the end of January after a variety of treatment, the last of which was with occasional cupping to the chest, and a mixture with muriated tincture of iron and nitre. The iron was discontinued soon after, on account of severe headache, and infusion of calumbo given. She was discharged February the 21st; the symptoms being all much alleviated, but, like in the last case, not removed. The pulse had again fallen to 80. The catamenia had not reappeared.

The latter state of Elizabeth Freethy, whom I have before noticed in this lecture, was becoming much like that of the two last cases; and I have met with eight or ten cases in private practice in which phthisis has come on in a similar way in females. The remarkable features in these cases are imperfect or suppressed menstruation; the daily expectoration of more or less blood for a considerable length of time; the absence of considerable emaciation; the absence or trivial character of the cough at first, and sometimes its convulsive character at a later period, and throughout the predominance of various symptoms called hysterical or nervous, such as hysterical fits or sensations, neuralgic pains, nervous dyspnoea, palpitation, dysuria, &c.

I must again warn you against the common mistake of considering such cases as mere hysteria, because they present many nervous symptoms. Phthisis attacks hysterical subjects as well as others; and in them the symptoms of phthisis are conjoined, at first at least, with those of hysteria. Nay, I believe that the irregularity of functions, the state of general ill health, that in nervous females constitutes aggravated forms of hysteria, is a condition peculiarly predisposing to phthisis. No sooner are tubercles deposited than they become the local cause of various nervous and vascular affections which accompany hysteria, neuralgic pains, sympathetic irritation, convulsive cough, asthma or dyspnoea, sanguineous congestion, or actual hæmorrhage, either occasionally vicarious of, or constantly superseding, the natural uterine discharge.

Another cause of deception is, that these cases are usually slow in progress, which confirms the practitioner in the opinion that they are merely "hysterical." I formerly thought much less than I do now of a female expectorating blood. If it be at the menstrual period we are often told that there is no harm in it. I am not prepared to say that females may not expectorate blood with-

out disease of the lungs; but I must now say that of late years I have met with none who have repeatedly expectorated blood, even at the catamenial period, whose lungs were sound. Several private patients, who have been for years under my notice, whom I used to refer to the former category, I have been obliged, by later observation of the progress of the disease, to include under the last.

The truth seems to be, that in an hysterical or nervous subject, effects and symptoms are produced by a smaller amount of tubercle, or of any organic disease, than in one that is not nervous, yet the effects and symptoms that are so induced are less those commonly resulting from the organic disease than those of hysteria; or at least some combination of the two, in which the nervous phenomena eclipse the rest. Hence the more serious disease, although advancing, is masked, whilst the acknowledged nervous disorder gains full attention.

To avoid these errors, study closely the physical signs. Percussion, used according to the principles and varied methods which I have explained to you, will generally give earlier indications of tubercles than auscultation will. The duller or more raised stroke sound, under a clavicle, in the top of an axilla, or on the spine of a scapula, is often the earliest sign. With it, or soon after it, there may occur defective, tubular, or rough inspiratory sound; distinct, prolonged, rough, vibrating, or crackling expiration; with submucous, subcrepitant, or sibilant rhonchi; increased vocal fremitus; and, in cases of more extensive deposit, irregular or imperfect movement of that part of the chest during the respiratory actions. In practising percussion in these nervous subjects, we often find that the stroke excites cough, particularly on the most diseased side. It is possible that such an effect might ensue from mere neuralgic sensibility; but I do not remember to have met with an instance of chronic affection in which it was not accompanied by signs of partial consolidation of the lung.

## VACCINATION.

*To the Editor of the Medical Gazette.*

SIR,

THE remarks in your leader for the week before last, upon the scantiness of the Annual Report of the National Vaccine Establishment, must awaken in the minds of many of your readers a reflection or two upon the "literary parsimony" on this same subject, which has latterly been evinced by the profession at large. If we may judge, at least, by the weekly medical press,



there has not for many years been a time when vaccination has occupied so little of the attention of the Faculty, as during the last year and a half that we have been favoured with an Act of Parliament expressly devoted to the matter: and yet, as far as my own limited knowledge goes, the operation has been more frequently performed in that short time than in double the time at any period before the Act. Can it be that, while there is more practice of vaccination, there is less observation of it worth recording?

One great cause of regret at the infrequency of papers on the subject is, that the few which do appear must be, statistically speaking, comparatively worthless, from the limited extent of individual experience, and the absence of any large accumulation of cases from other quarters, with which, as a standard, each fresh accession may be compared.

This inconvenience may, perhaps, be well illustrated by reference to a paper by Mr. Paterson, of Aberdeen, at page 546 of your last volume. This gentleman, apparently from an observation of only a hundred cases, arrives at certain most weighty conclusions as to the cause of failure in the operation of vaccinating, and in the prophylactic power of cowpock. I lately hazarded some inferences from my first three hundred cases under the Vaccination Act, which inferences were nearly all at variance with those of your correspondent. "Failures," he says, "arise (most, if not all,) either from the constitution of the child from whom the virus is taken, or from some mismanagement on the part of the operator." It is not clear, from the context, whether Mr. Paterson here means failure to produce cowpock, or failure of cowpock to prevent variola. If the former, my experience is opposed to the proposition; if the latter, namely, that cowpock derived from an unhealthy patient is of inferior prophylactic power, I fear the united experience of that gentleman and myself, however extensive, would hardly be large enough to do much towards settling the question. One point I feel confident is of the greatest importance—never to give the cowpock to a child that is out of health. I have seen undoubted and fatal proof of the propriety of this rule.

The "mismanagement on the part of the operator," to which so many failures

are attributed by Mr. Paterson, is indicated, in an earlier paragraph, to be the "operating before the pock is perfectly matured." Now, in the 300 cases before alluded to, I found the success of the operation to increase regularly in proportion to the earliness of the day on which the inserted lymph had been taken. Thus, ten-day lymph succeeded in only half the cases in which it was used; lymph of the eighth day had four successes to one failure; of the sixth day, eight successes; and lymph of the fifth day, as many as twelve successes to one failure. "Lymph," it is said, "is not unfrequently taken from a mere pimple." Waiving the objection that this can hardly occur if a pimple is not a vesicle, but a solid eruption, I believe I adopt the opinion of several high "written authorities" in saying that the sooner lymph can be got, the surer are we of making it produce the disease in a second patient.

As to the early age of the patient vaccinated being a cause of failure (to produce the disease), I perfectly agree with Mr. Paterson. Of 63 children vaccinated under two months, 37 took cowpock, and 26 failed. Of 67, from two to six months, 46 succeeded, and 21 failed; while, of 64 cases, at from one year to two years old, 61 took, and the failures were only 3!

Where small-pox prevails, or where there is anxiety on the part of the parents, vaccination, of course, cannot be performed too early; and the operator must guard himself as he can against discredit in case of failure. But where no such causes of haste exist, the period named by Mr. Paterson, that is from the fourth to the sixth month, would seem to be in general the most eligible.

As to the retardation of the course of the disease, this, I think, happens less frequently than a delay of the time at which the operation begins to take effect. In one case, I well remember nearly three weeks elapsing before a vaccination showed any effect; and thenceforward the disease went on at the usual pace, completing its areola about the ninth day from the time when the first sign of success had appeared.

My object, however, in these remarks, being rather to show the necessity of further information on the minuter details of the subject—information which the recent statute, one would think, ought to render abundant

—than to offer any positive views of my own in the same breath with my acknowledgment of the insufficiency of my data, I shall only express a hope that the powers given by the legislature may have the effect, not only of extending the practice, but of improving the science, of vaccination; and beg leave to subscribe myself,

Your most obedient servant,  
F. A. B. BONNEY.

Brentford, April 5th, 1842.

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AN ENQUIRY  
INTO THE RESULTS OF  
PUNCTURE OF THE HEAD, IN  
CASES OF CHRONIC INTERNAL  
HYDROCEPHALUS,

BY CHARLES WEST, M.D.

Physician to the Finsbury Dispensary.

(For the London Medical Gazette.)

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SOME months since a case of chronic hydrocephalus came under the writer's observation, in the management of which a question arose as to the propriety of performing paracentesis capitis. The operation was performed, but was not followed by any amelioration in the condition of the child, which died seventeen days afterwards.

While engaged in watching this patient, the writer referred to various sources, in order to ascertain what prospect of recovery is afforded by the operation. He met with reports of many isolated cases, and with opinions very positively expressed both in favour of paracentesis, as well as against its performance; but no work presented the results of actual experience. The following paper is intended to supply, in some slight degree, this deficiency, and to spare others the irksome task of hunting through volumes of journals, in which these cases are for the most recorded.

The history of the operation does not require more than a passing notice. In Hecker's dissertation\* will be found full details of all that has been said concerning it by the writers of antiquity. Hippocrates was well acquainted with it, and it appears to have been occasionally practised, by surgeons in the middle ages, since, though it is now condemned by some as useless and dangerous, or spoken of as having fallen into disuse. Until the middle of

the last century it was customary to allow as much fluid as could be evacuated to flow through the puncture. Le Cat, however, modified the operation by permitting the escape of only a small quantity of fluid at one time; and for the more convenient attainment of this object, he devised a peculiar trocar, of which a drawing and description are given in Vol. 47 of the Philosophical Transactions. Since then the operation has been frequently resorted to, although the weight of authority was against its performance, until the recent announcement of Dr. Conquest that he had had recourse to it in 19 cases, in 10 of which he had obtained favourable results.

The writer has found mention of 63 cases of chronic hydrocephalus in which the cranium was punctured.\* In two of these cases, however, the puncture was accidental,† while in five instances the results were not such as would justify classing the cases either as fortunate or unsuccessful.‡ Fifty-six cases then remain, in 40 of which the patients died, while in 16 they are alleged to have recovered; or, in other words, the proportion of recoveries to deaths was as 1 : 2.5, and as 1 : 3.5 of the total cases. These results, though considerably less favourable than those obtained by Dr. Conquest, still appear at first sight to afford ample justification of the operation: but the particulars contained in the following table will, perhaps, in some degree modify such an opinion.

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\* Two cases in which the fluid was accumulated between the scalp and cranium, constituting external hydrocephalus, are purposely omitted. They are described by G. C. Fenoglio, in *Omodei, Annali Universali*, vol. xxviii. p. 370; and by K. Textor, in *Meissner's Forschungen*: vol. iii. p. 342.

† These are the cases of Greatwood, (*Lancet*, May 23, 1839, p. 238), in which the puncture was made by a nail; and Höfling, *Casper's Wochenschrift*, Oct. 14, 1837, in which a hydrocephalic head was burst by a kick from a cow. The patient in both instances recovered.

‡ Hotbroke, *London Medical Repository*, vol. xxiv. p. 246. Head punctured thrice, with slight amendment: final result not stated.

Dr. Vose, *Med. Chir. Transactions*, vol. ix. p. 354. Improvement from the operation, but disease returned, and destroyed the patient.

Dr. Conquest, *Lancet*, March 17, 1838, p. 800. Case of W. Hattoney: died of pertussis some months afterwards: placed by Dr. C. among his unsuccessful cases.

Dr. C. A. Lee, quoted in *Stewart on Diseases of Children*, p. 353. Punctured twice with benefit. Child died of cholera twenty days after second operation.

Dr. Kilgour, *Edin. Med. and Surg. Journal*, vol. lili. p. 363. Head punctured four times, operation then discontinued; no benefit seeming to accrue from it.

\* *Antiquitates Hydrocephali*, &c. Auctor. J. Fr. C. Hecker, 8, Berol.

No.	Sex.	Age.	Duration of Disease.	Symptoms before Puncture.	Size of the Head.	Number and Date of Punctures.	Quantity of Fluid in lbs. and ounces.
1	—	b'tween 11 & 12 years	—	Came on in consequence of a fall; head enlarged to a third beyond natural size, and parietal bones opened so as to allow fluctuation to be felt. These symptoms came on three months after the fall.	A third larger than natural.	One	lbvj. of water drained away in 20 days.
2	F.	4 m. 11 days	began in 6th week	Began with fits and enlargement of head. Bowels torpid; strabismus; child had an idiotic look.	Apparently double.	Eighteen Dec. 10. 17. 25. 28. 31. Jan. 5. 9. 14. 19. 23. 28. Feb. 4. 8. 18. 25. Mar. 3. 6. 10.	oz. $\frac{1}{2}$ + 5 + 4 + $5\frac{1}{2}$ + 4 + 4 + 7 + $7\frac{1}{2}$ + 7 + $2\frac{3}{4}$ + 10 + $3\frac{1}{2}$ + 0 + 0 + 5 + 3 + 4 + 4 = $76\frac{1}{4}$ .
3	F.	12 wks.	began a few days after birth	General health good, but bowels irregular; strabismus, and rolling of the eyes.	23 inches incircumference.	Four August. 25. Sept. 4. 15. Oct. 5.	oz. 3 + $5\frac{1}{2}$ + 1 + $9\frac{1}{2}$ = 19.
4	M.	4 mths.	head large at birth	Child healthy, cheerful, not emaciated. The fluid was supposed to be external to the ventricles.	$18\frac{1}{2}$ inches in circumference.	Eleven Jan. 8. 15. 23. Feb. 19. Mar. 15. 19. Apr. 19. 27. May 5. 17. June 23.	oz. $1\frac{1}{2}$ + 2 + 2 + $2\frac{1}{4}$ + $1\frac{1}{2}$ + $2\frac{1}{4}$ + $1\frac{1}{2}$ + $1\frac{1}{2}$ + $2\frac{1}{4}$ + $2\frac{1}{2}$ + 2 = $21\frac{1}{4}$
5	—	14 m.	—	—	—	Nine within 4 months.	Ojas. by first puncture, less by subsequent ones.
6	—	10 m.	excited from birth	Child very ill; pupils dilated. States that inflammation of the brain and its membranes existed, but does not mention a single symptom.	—	One	oz. 24.
7	F.	20 m.	began in 14th mth	Head had been gradually enlarging for half a year.	—	One	oz. 2, but a large quantity, supposed to be Oij. drained away.
8	M.	5 mths.	congenital	Hiccough and vomiting; eyes heavy, somewhat convulsed.	Head of enormous size from birth.	Two beginning of Aug. Sept. 3.	oz. 12 + 12 = 24.
9	F.	—	—	—	—	Five	oz. 55.
10	F.	—	—	—	—	Three	oz. 26.
11	F.	—	—	—	—	One	oz. 13.
12	F.	—	—	—	—	One	oz. 9.
13	M.	—	—	—	—	One	oz. 6.
14	F.	—	—	—	—	Three	oz. $31\frac{1}{2}$ .
15	M.	—	—	—	—	Two	oz. 14.
16	M.	—	—	—	—	One	oz. 9.

Subsequent Progress.	Date of Report.	Authority.
"Patient was saved."	—	Monro on Hydrocephalus, p. 146, quotes the case from Pr. Rossi.
The fluid removed was clear first, but, on the 8th and 9th punctures, was of a darker colour and thicker consistence, but regained its transparency at subsequent operations. The immediate effects of the puncture were never serious. Slight febrile symptoms, and occasional vomiting, and fretfulness, occurred at different periods, but fits only once, just before the sixth operation. The ossification of the head proceeded so that the situation of the first puncture became ossified.	Ninety days after first puncture; day of last puncture. Case then going on favourably.	Mr. Lizars, Ed. Med. and Surg. Journal, vol. xvii. p. 243.
The fluid was serous, on the second time was turbid and mixed with flakes of lymph. Slight fever after first, not after others. Ossification advanced; head diminished; child went on well; obscure fluctuation remained three weeks after last puncture. Calomel was then given, so as to affect the mouth.	Four months after last puncture, then stout, healthy, and very large of her age. Head ossified, except anterior fontanelle, and four inches less in circumference.	Mr. Russell, Ed. Med. and Surg. Journal, vol. xxxviii. p. 43.
After each operation there was great faintness, pallor, and failing of the heart's action during several hours. Great restlessness followed for a night or two after each operation.	Seventeen months after last puncture, child was healthy, and head measured 18½ inches in circumference.	Graefe. Graefe and Walther's Journal, Bd. xv. S. 348.
Great improvement followed the first puncture; the others left the child in a very satisfactory state.	Died of pneumonia more than a year afterwards.	Dr. Fourcade, Lancette Française, vol. iv. No. 47, p. 188, reports from recollection case operated on by Dr. Bédor.
Iodide of potassium ointment employed; calomel and mild aperients given. "Though the little sufferer was for some time in a precarious state, he did recover, and is now a very fine boy, never having had the slightest return of the complaint."	—	Mr. Marsh, MED. GAZ. vol. xvii. p. 985.
One convulsion followed the puncture, and afterwards other symptoms of meningeal irritation.	Two and a half years afterwards health and intellect good.	
Continued weakly during the day of puncture, but more lively than before, and for some time after the intensity of all the former symptoms diminished. A month after it was found necessary to repeat the puncture.	Nearly eight years after, head then too large, but not larger than before the operation. Health good.	Dr. Conquest, Lancet, March 17, 1838; and MED. GAZ. vol. xxi. p. 967.
—	Five years after, head 22 inches round; ossification complete, except posterior fontanelle, and two openings in coronal suture. Health good, remarkably shrewd.	
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Chronic hydrocephalus is a disease usually slow in its progress and intermittent in its advances, occasionally pausing for months, or even years, and then increasing without any evident cause. Before any case, then, can be admitted to have been cured by the operation, it must be shown that a considerable time had elapsed since its performance; and that during this period the health of the patient was perfectly good. Nos. 4, 7, 8, and 9, are the only instances in which both these conditions are fulfilled. In No. 5, the former condition is complied with, but the evidence of the patient's health is very unsatisfactory; the case being reported some years after the death of Dr. Bédor, while nothing can be more vague than the statement that the child was left *dans un état très satisfaisant*. The history of Mr. Russell's patient is com-

plete; but with the evidence afforded in Dr. Vose's case, in which the disease returned and proved fatal after apparent recovery, we should be slow to admit four months as a period sufficiently long to test the permanence of the cure. In the child operated on by Mr. Lizars, decided improvement seems to have followed the puncture; but his report of the case was forwarded on the very day on which he performed paracentesis for the eighteenth time, and of the subsequent history of the patient nothing is recorded. But, defective as the cases are in the above-mentioned respects, they are not less so in the absence of information as to the condition of the child before the puncture was resorted to. Cases 2, 3, and 4, are the only ones in which this condition is at all satisfactorily fulfilled. Very imperfect notices exist of Nos. 1, 6, 7, and 8; leav-

TABULAR VIEW OF CASES OF INTERNAL HYDROCEPHALUS IN

No.	Sex.	Age.	Duration of Disease.	Symptoms before Puncture.	Size of the Head.	No. of Punctures.	Quantity of Fluid.	Immediate Effect.
1	M.	9 m.	Began at 3d month.	Sucked well, but was emaciated.	At 8th month larger than head of a man.	One	1lb. Fluid continued to drain away afterwards.	—
2	M.	3 m.	Began in 7th week.	Well nourished, but fretful.	Sutures separated.	Three	5 + 5 + 5 = 15	—
3	—	3 m.	—	—	Very large.	One	—	Bore operation well.
4	—	2 m.	Congenital.	Healthy and strong: head had much increased in size; eyes very prominent.	—	Five	10 + 12 + 14 + 12 + 32 = 80	—
5	M.	2 y.	Congenital.	Well.	25 inches round at 6th month	One	—	—
6	F.	5 m.	Noticed at 5th month	Indisposed for three weeks with crying and screaming. Pupils immoveable.	Very large, fluctuating.	Six	9½ + 9½ + 6 + ½ + 2½ + 1½ = 29½	Sickness and vomiting after 2d; 4th puncture made in the fontanelle; 4½ oz. of blood escaped, and child seemed like to die.



ing 9 out of 16 cases in which this point is passed over in silence.

It would have been interesting to have been made acquainted with the circumstances to which the brilliant success of the operation in Dr. Conquest's hands is attributable. But, unfortunately, no data are given in 15 out of 19 cases, beyond the mere statement of the number of punctures, and the quantity of fluid removed. The age of the patient, the duration of the disease, the symptoms attending it, the size of the head, and the condition of the intellectual faculties before and after the operation, are not noticed. We are left in perfect ignorance as to the time which elapsed before each patient was reported as cured ; and yet, on grounds so slender, an impression has got abroad in this country and elsewhere

that paracentesis capitis is a means to which recourse may be had in cases of chronic hydrocephalus, with a well-founded expectation of success.

From numbers so small, and furnished with such imperfect details, it would be impossible to attempt any numerical exposition of the chances of recovery afforded by the operation. An analysis of the first table has shown how few are the instances in which permanent cure has been proved to have resulted from its performance. The second table not merely exhibits the great preponderance of failures over successful cases, but likewise shows that in very many instances an aggravation of the symptoms followed the operation, and that life was apparently much shortened by it.

WHICH PARACENTESIS WAS UNSUCCESSFULLY PERFORMED.

Subsequent Progress.	Date of Death.	Condition of the Brain after Death.	Authorities.
Child sank.	36 hours after the puncture.	—	Fabricius Hil-danus, Ob-serv. Chirurg. cent. iii. obs. 17.
Well for 2 days, then taken ill : died on evening of 4th day.	84 hours after 1st, 36 after last puncture.	Excessive dilatation of ventri-cles ; atrophy of pineal gland ; very little trace of choroid plexuses.	Le Cat, Philo-soph. Trans. v. xlvii. p. 257.
—	Day after the puncture.	Fluid between cranium and dura mater.	La Motte, Traité com-plet de Chi-rurgie, tome i. obs. 115.
After 3d puncture, head re-duced to natural size ; after 1st week, head swelled again. Exhaustion came on 3 weeks after 5th puncture ; death in 10 days.	3 months 9 days after 1st, 31 days after last puncture.	Cavity of brain full of enormous quantity of clear water ; scarcely any brain found, but only me-dulla oblongata, and a small quantity of brain behind the orbits.	Dr. Remmett, Edin. Med. Comment. vol. vi. part 4.
—	16 hours after puncture.	Two pounds of clear fluid con-tained in brain, in cysts, with vascular coats ; cerebellum around fourth ventricle hard ; crura cerebri ulcerated.	Dr. A. Monro, Morbid Ana-tomy of the Brain, vol. i. p. 11.
More lively ; convulsions ; and hemiplegia affecting right side, on 3d day after 1st punc-ture ; ceasing in course of one day. Diarrhœa for some days. Coma before 2d and 3d punctures ; relieved by the operation. Seemed better on day of 6th puncture ; fits on following day ; tranquil death soon after.	37 days after 1st, 1 day after last puncture.	Two pounds of sero-sanguineous fluid in ventricles ; walls of ven-tricles very thin ; brain soft ; coagulum size of a hazel-nut in posterior corner of left lateral ventricle.	Mr. R. Brown, Med. and Phys. Journal, vol. li. p. 102.

No	Sex.	Age.	Duration of Disease.	Symptoms before Puncture.	Size of the Head.	No. of Punctures.	Quantity of Fluid.	Immediate Effect.
7	M.	9m 20d	Con- genital.	Good, and continued so, notwithstanding fruitless employment of medicines; head hot, appetite craving.	23 inches round above tips of ears.	Ten	$4\frac{1}{2} + \frac{1}{4} + 5 + 3 + 3\frac{1}{2} + 3 + 3\frac{1}{2} + 3\frac{1}{2} + 4 + 2 = 40$	No striking effect.
8	M.	9 m.	Con- genital.	Child had a spina bifida, but health good.	27 inches round.	Three	$10 + 16 + 14 = 40$	—
9	F.	4 m.	Con- genital.	General health good; head had progressively enlarged.	24 inches round.	Eight	$12 + 12 + 12 + 9 + 12 + 3 + 9 + 12 = 81$	Very slight except after 5th puncture, when faintness was produced.
10	—	6 m.	Six or seven weeks after birth	Always unquiet, but tolerable health to 5th week; became gradually emaciated; bowels irregular; constant crying, no sleep.	23 inches round.	One, but wound opened twice a day for several days.	116 in course of 8 days.	—
11	M.	7 m.	Began about a month after birth	Fever; screaming; squinting at 3d week; in 10 days enlargement of head, which increased; other symptoms abated.	$21\frac{1}{2}$ inches round.	One	6	Vomiting soon after.
12	M.	8 m.	Began in 3d month.	Sickly from birth; convulsions at 2 months; emaciation; constant crying; strabismus.	$21\frac{1}{2}$ inches round.	Five	$14\frac{1}{2} + 3\frac{1}{2} + 7 + 7 + 16 = 47\frac{1}{2}$	Uneasy during 1st, sensible of pain afterwards; uneasy, and occasionally convulsed after 5th.
13	M.	11 w.	Began in 6th week.	Always fretful, throve till 6th week, then wasted; head swelled. No squinting.	Fluctuation in head distinct.	Six	6 by first, afterwards $+ 36 = 42$	No inconvenience; sensible improvement.
14	M.	5 m.	Began at 2 months.	Good for two months, but head always inclined to side; then swelling of head, fits of crying, cough, and emaciation. No vomiting or convulsions.	$20\frac{1}{2}$ inches in circumference.	One	11	None; head much collapsed; vomited same evening.
15	—	5 w.	—	—	Supposed to contain 2 to 3 pints.	Five	$4 + 3 + 4 + 4 + 4 = 19$	—
16	—	$6\frac{1}{2}$ m.	Began in 4th month	Well nourished: general symptoms very slight.	—	One	37	Brain protruded through 1st puncture (with a lancet), which was therefore repeated.

Subsequent Progress.	Date of Death.	Condition of the Brain after Death.	Authorities.
Slight improvement followed each puncture. Continued well, except erysipelas of face, till day of last puncture; then, convulsions returning frequently, child wasting till death.	84 days after 1st, 11 after last puncture.	Dura mater thickened; pia mater inflamed; cerebral substance very thin, lined by false membrane; no trace of corpus striatum, callosum, &c.; bag of cerebrum divided into cells by membranous bands, contained 35 oz. of fluid; cerebellum firm.	Mr. Money, Med. and Phys. Journal, vol. lii. p. 462.
—	30 days after 1st puncture, 9 after last.	—	Mr. Gray, Med. and Phys. Jo., vol. liv. p. 204.
Health good for a few days: considerable exhaustion after 2d puncture. On 5th puncture, 6 weeks after 1st, situation of original puncture ossified. Two convulsions before 7th puncture, again after 8th.	110 days after 1st, 8 after last puncture.	Fluid between dura and pia mater; the former thickened, but with no signs of acute inflammation; brain nearly all absorbed, not larger than a hen's egg, soft, and parts not distinguishable.	Dr. Glover, Philadelphia Jour. of Med. and Phys. Sciences, vol. ii. p. 159.
Seemed going on well, though fluid re-collected; head greatly diminished in size; sutures, which had been 3 inches across, came into apposition. On 9th day, convulsions, coma, death.	9th day from making the puncture.	Membranes gangrenous for several inches round puncture, contained four pounds of turbid, foetid fluid; whole upper part of brain disappeared; some at base, like pons varolii.	Dr. Witmore, American Med. Recorder, July 1821.
First night restless; next night better; screaming 58 hours after, followed by fits; and death, in fit, 14 hours after.	72 hours after puncture.	No trace of inflammation; brain very soft; two transparent sacs in left ventricle, one in right communicating with third and fourth: they were smooth and tough, attached to brain at under, unconnected at upper surface; nates and testes formed a tumor, containing 1 drachm of pus; lower parts of brain healthy.	Mr. Hood, Ed. Med. Surg. Journal, vol. xvii. p. 510, Oct. 1821.
Slight convulsions on night after 1st puncture; improvement, less strabismus, increased ossification; cried much after 4th convulsions, and death 3 days after 5th.	51 days after 1st puncture, 3 after last.	No sign of inflammation; fluid in ventricles; brain greatly expanded; cerebellum healthy.	Dr. Freckelton Ed. Med. Sur. Journal, vol. xvii. p. 240.
Relief after each puncture; a fortnight after last, water ceased to accumulate. No ossification of skull took place.	11 weeks after 1st puncture, 3 after last.	No sign of recent inflammation; 2½ lbs. of fluid in sac of arachnoid; atrophy of cerebrum which was not larger than a bean.	Mr. J. Sym, Ed. Med. Sur. Journal, vol. xxiv. p. 295.
Went on well till 3d day, head being 2½ inches smaller. On 3d day, great restlessness, vomiting, rigidity of one arm, convulsions: death on 4th day.	87 hours after the puncture.	No inflammation of brain or its membranes; ventricles contained yellowish white fluid, like seropurulent fluid and water, with albuminous flakes; some softening of ventricles.	Dr. J. Alison, Ed. Med. Sur. Journal, vol. xliii. p. 359.
—	16 weeks after 1st, 5 weeks after last operation.	—	Mr. Callaway, as reported by Oppenheim, Rust's Mag., v. xxiv. p. 77.
Pretty well, but somewhat excited 1st day; head filled again between 3d and 6th day; on 7th, a gush of fluid from situation of 1st puncture, followed by convulsions and involuntary discharge of urine and feces.	9th day after the puncture.	—	Dr. Roechling, Hufeland's Journal, Aug. 1826, p. 114.

No	Sex.	Age.	Duration of Disease.	Symptoms before Puncture.	Size of the Head.	No. of Punctures.	Quantity of Fluid.	Immediate Effect.
17	F.	16 m.	Began at end of 3d month.	Began with convulsions; health then good until dentition began, then lost motion of left arm and leg; had fits with each tooth, and occasional strabismus.	26 inches round.	One	2½, and more drained from wound.	Considerable collapse.
18	F.	16 m.	Began in 4th month	Health bad; pupils dilated; insensible to light; coma for several months; occasional convulsions.	—	One	20	Cold, faint, lips livid, requiring strong stimulants.
19	F.	6m. 3w	Began at 5th month	Great strabismus.	18 inches in circumference.	Four	9 + 2 + 3 + 2½ = 16½	No suffering.
20	—	15 w.	—	—	—	One	10	—
21	—	9 m.	—	Great emaciation.	30 inches in circumference.	One	10	—
22	—	2 m.	Con-genital.	Health tolerably good — child intelligent.	23 inches in circumference.	Two	28	Improved appearance.
23	M.	4 m.	Began at 1 month.	Good, except frequent convulsions.	21 inches in circumference.	Seven	1½ + 2 + 6 + 11 + 15 + 12½ + 14 = 63	None.
24	—	3 m.	Began at 1 month.	Health good, but bowels costive; had spasms when a week old, ceased after 3 weeks, when head suddenly enlarged.	—	Four	14 + 17 + 14 + 13½ = 58½	Slight hæmorrhage from a vessel at 3d puncture.
25	M.	7m 12d	Began at 2d month.	Small-pox at 5th week; enlargement of head from 2d month; at 5th month blind; oscillation of eyes; starting and screaming, afterwards fits.	22½ inches round at 5th month	Ten	4 + 5 + 6 + 7 + 12 + 16 + 12 + 28 + 42 + 20 = 153	After 3 of the punctures, faint and pale, and once vomited. Nothing after any of the others.

Subsequent Progress.	Date of Death.	Condition of the Brain after Death.	Authorities.
A little improved 1st night, pretty well till 3d day; then violent convulsions and death.	4th day after the puncture.	Brain bloodless; 2 lbs. of fluid in ventricles; great thinning of their walls, of right especially, which formed a mere membranous bag, and was in parts of consistence of cream; parts at floor of left ventricle barely recognizable; at floor of right undistinguishable; cerebellum and base of brain healthy.	Dr. S. Hall, MED. GAZ. vol. vi. p. 334.
Slight fever for a few days, then seemed better. In 10 days water began to accumulate. In 1 month and 3 days symptoms of nervous debility, in 3 days more painless death.	5 weeks after the puncture.	No trace of inflammation; great accumulation of fluid in the ventricles.	Mr. Marsden, Lancet, Feb. 12, 1831, p. 648.
Vomiting on 2d and 3d day, fever on 4th, coma on 5th, convulsions on 6th.	6 days after puncture.	One pound of fluid in cranium; puncture had not penetrated the brain; dura mater adherent to skull; brain soft and very vascular; great distension of lateral ventricles with fluid; no inflammation about puncture.	Oppenheim, Rust's Mag. v. xxiv. p. 89.
—	—	All the ventricles formed but one large cavity, covered by but very little brain.	Ruppius, in Meissner's Forschungen, vol. iii. p. 240.
—	In a few days after the puncture.	—	Meissner, Die Kinderkrankheiten, vol. ii. p. 187.
Exaltation of sense of hearing, then improvement for 2 or 3 days; re-accumulation of fluid in a fortnight, gradual sinking after 2d puncture.	3 weeks after 1st puncture, 1 week after last.	Great vascularity of the membranes; softening of the brain; accumulation of fluid in the ventricles.	Mr. F. Cooper, Lancet, June 27, 1835, p. 405.
Convulsions ceased a few hours after 1st puncture; returned slightly before 3d and 5th. Health good till day before last puncture, then stupor; relieved for a time by puncture; 2 days after, quiet death.	115 days after 1st, 2 after last puncture.	Membranes pale, bloodless; septum lucidum torn; lateral ventricles formed one large sac, lined by thick flakes of matter, like pus or mucus.	Prof. L. A. Dugas, Amer. Journ. of Med. Sciences, vol. xx. p. 536.
Convulsions on 5th day; continued enlargement of head after each puncture; occasional convulsions, followed at length by coma and death.	62 days after 1st, 11 after last operation.	Fluid in the ventricles; great thinning of the brain; hole through falx and tentorium; cerebellum healthy.	Dr. J. B. Withridge, Am. Journ. of Med. Sciences, vol. xx. p. 538.
Improvement for 2 months, and progressing ossification; then improvement ceased, and head became quite as large as ever.	131 days after 1st puncture, 2 days after last.	Arachnoid engorged; fluid in all three ventricles; brain very soft; lymph at its base.	Dr. J. R. Smyth, MED. GAZ. vol. xxv. p. 83.
Convulsions came on, but ceased some weeks, till day before death, and child died in a fit.			



No.	Sex.	Age.	Duration of Disease.	Symptoms before Puncture.	Size of the Head.	No. of Punctures.	Quantity of Fluid.	Immediate Effect.
26	F.	10 d.	Con- genital.	Good at birth; at end of ten days head hot; child fretful; bowels disordered.	Head at birth twice natural size.	Two	$10 + 8 = 18$	After 1st puncture cold, faint, as though about to die; state after 2d not mentioned.
27	M.	8 m.	Began at end of 4th month	Health quite good up to 10th week, even now tolerably good; bowels regular; well nourished; eyes constantly rolling.	$22\frac{1}{2}$ inches in circumference.	Four	$20 + 23 + 22 + 19 = 84$	No peculiar effect.
28	F.	9 m.	Began in 3d month.	Healthy; in 15th week able to hold up its head, though very large; cried occasionally; continued well to 9th month, but head then too big to move.	$21\frac{1}{2}$ inches in circumference.	One	4, much drained away.	$\frac{1}{2}$ oz. of blood escaped; 4 days after, on passing a probe, 4 oz. of water.
29	—	8 m.	Began at 4th month	Screamed very often; slight convulsions; occasional vomiting; distortion of eyes downwards.	—	Two	$4 + 3 = 7$	Improved appearance followed immediately.
30	—	7 m.	Began at 2d month.	Good health.	$19\frac{1}{2}$ inches in circumference.	Two	$20 + 28\frac{1}{2} = 48\frac{1}{2}$	Pale, cried slightly after 1st; pale, did not cry after second.
31	F.	12 w. 1 d.	Began in 3rd week.	Fits of crying a fortnight after birth continued to recur, but without convulsions or strabismus.	$16\frac{1}{2}$ inches in circumference.	Five	$12 + 12 + 5 + 8 + 16 = 53$	Crying ceased; child seemed more comfortable.
32	M.	—	—	—	—	Five	$48\frac{1}{2}$	—
33	M.	—	—	—	—	Four	45	—
34	M.	—	—	—	—	Two	20	—
35	M.	—	—	—	—	One	8	—
36	M.	—	—	—	—	Two	22	—
37	M.	—	—	—	—	Two	17	—
38	F.	—	—	—	—	One	$7\frac{1}{2}$	—
39	F.	—	—	—	—	Four	33	—
40	M.	15 m.	Began at 5th month	Inward fits from birth; emaciation at a fortnight; increase of head and fits at 5 mo.; general health improved until 14 months, then fits more frequent, and child wasted more; but appetite very good.	26 inches in circumference.	One	16	Cried much; slight fit immediately after.

Subsequent Progress.	Date of Death.	Condition of the Brain after Death.	Authorities.
After 1st puncture, seemed improved; water re-accumulated at end of a week; after 2d, no improvement; at end of a fortnight after, head as large as before. Parents would not permit its repetition. Child wasted; died convulsed.	6 months 5 days after 1st, 5 months 12 days after last operation.	Fluid under dura mater; cerebrum so flattened that parts were undistinguishable.	Mr. Armstrong MED. GAZ. v. xxvi. p. 226.
Occasional vomiting; slight convulsions; head rapidly regained its size. 14 days after last puncture, moaning, crying, contractions of limbs, faintness, and difficult breathing came on.	7 weeks 3 days after 1st, 15 days after last operation.	Fluid within the membranes; left hemisphere almost totally destroyed, right greatly compressed; optic nerves diseased; left olfactory destroyed; right nearly so; cerebellum healthy.	Dr. Kilgour, Ed. Med. Sur. Journal, vol. liii. p. 365.
On day after the escape of the fluid, slight convulsions, eyes less distorted, but child began to sink, whined, then threw its arms about.	6th day after puncture.	Some congestion of membranes near puncture; brain quite white, very soft; ventricles immensely distended; cerebral substance seemed macerated, infiltrated with water; parts in ventricles undistinguishable; nerves at base soft; cerebellum large, soft; cavity in its centre; no trace of arbor vitæ.	Dr. Schaeffer, Casper's Wo- chenschrift, Aug. 19, 1837.
On evening of 4th day after first tapping, child grew dull; respiration hurried, and death took place before midnight.	4th day after 1st, 3d after 2d puncture.	—	Dr. Watson in Tweedie's Lib. of Med. p. 147.
After 2d puncture, cerebral symptoms came on, head being smaller. Head regained size in 10 days after 1st puncture.	24 days after 1st, 24 after 2d puncture.	—	Malgaigne, l'Expérience, Nov. 19, 1840.
Occasional fits for 10 days after 2d puncture; then frequent screaming, and increasing weakness, without fits, till 2 days before death, when they returned frequently.	15 weeks after 1st puncture, 5 weeks after last	Twenty-nine ounces of clear fluid in ventricles, which were lined by a brownish mucus; septum lucidum thickened; small tubercle at decussation of optic nerves.	Dr. Cold- stream, Edin. Monthly Jour. of Med. Sci. April, 1841.
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
Daily fits for 4 days, with more sluggish condition than before. In 7 days, head as large as before the puncture, to the repetition of which parents would not consent; refused food; diarrhoea for 7 days; emaciation, increased weakness; death.	17 days after the puncture.	Seventy-five ounces of fluid in the ventricles, and infiltrated into brain, which was split up into layers forming several distinct pouches; the walls of these pouches were not formed by false membrane, but were all continuous with the corpus callosum, into which their fibres might be traced; cerebral substance at base had a jelly-like appearance; optic nerves much spread out; fluid infiltrated between fibres of cerebellum	Dr. Con- quest, Lan- cet, March 17, 1838; and Med. Gaz. vol. xxi. p. 967.
			The writer.

In 30 of the above 40 cases, the interval which elapsed between the performance of the operation and the patient's death is stated; and it appears that the deaths after the first puncture were as follows:—

Deaths.	Average duration of life after the puncture.
6 within 4 days	53 hours
6 „ 14 days	6 days, 8 hours
3 „ 1 month	20 days, 16 hours
9 „ 3 months	56 days, 10 hours.

Of the remaining 6, only 1 survived the puncture 6 months; and the average duration of life in each of these was 3 months, 4 days, 12 hours. In 18 of these patients, the operation was performed more than once; but in no instance did the children survive the last puncture more than 35 days, while the average duration of life was 12 days, 22 hours.

The instances, then, in which life was prolonged by the operation appear to be very few, and the cases in which any reasonable prospect of the patient's recovery existed after a week had elapsed from the first performance of the puncture, are still fewer. The table shows that sometimes the puncture was followed by an almost immediate aggravation of the cerebral symptoms, and by death. Usually, however, a degree of apparent improvement followed the puncture, but the fluid soon collected again, and less marked relief followed the second operation. With its repetition the quantity of fluid increased, and while the size of the head continued undiminished, or even grew larger, the body of the patient became emaciated; and death either took place from exhaustion, or cerebral symptoms came on, and life was terminated by coma or convulsions. The termination of an ordinary case of chronic hydrocephalus is usually preluded by low fever, with general emaciation, to which fatal coma or convulsions succeed; and precisely similar are the symptoms noticed in the cases in the second table, except that the signs of cerebral disturbance appeared with an intensity which, but for the mechanical injury to the brain, they would, probably, not have presented.

If the symptoms observed during life yield little encouragement to resort to the operation, the appearances disclosed after death afford a powerful argument against it. An account is given of the post-mortem examination of 26 cases.

In every instance fluid, sometimes in considerable quantity, was contained within the ventricles or in the cavity of the cranium, and the substance of the brain was softened and attenuated. But, in addition to these appearances, there existed, in 16 cases, serious organic disease or malformation of the brain itself, though no symptom during life had betrayed the existence of a condition which mechanical interference could only aggravate.

The above-mentioned facts have led the writer to form an opinion unfavourable to the performance of puncture of the head, as a means of curing chronic hydrocephalus. Other points of interest might be elicited by an examination of the tables, but it would not be possible to dwell on them within the limits of a single paper\*.

#### THE MEDICAL STATISTICS OF HASTINGS,

By JAMES MACKNESS, M.D.  
Physician to the Hastings Dispensary.  
(For the Medical Gazette.)

THE population of the borough of Hastings, at the last census, was upwards of 11,000. It enjoys one of the most genial climates in Britain, completely sheltered as it is by hills, and some of the highest land in Sussex. It is completely protected from the north and east winds, and only open to the south and south-west: its mean annual temperature is about 51° Fahrenheit, but it is particularly characterised by the equality of its temperature during the winter and spring months: it is in a great measure also free from those cold and dense fogs which are the bane of the English climate: this arises, in a great measure, from the light and sandy character of its soil, absorbing all humidity; at the same time a smaller annual quantity of rain (28 inches) falls at Hastings, than most other places on the southern coast, while the number of days on which rain falls during the six months of winter and spring are only sixty-three. From the superior altitude, and more exposed situation, of many of the buildings, the opportunity is also offered for invalids to select a more bracing or sheltered abode, as circumstances may require.

\* At p. 127 ante, col. 1, line 4 from bottom, *delete* "now"; and two lines lower, after "dangerous," insert "it is nowhere alluded to as a novelty."

Possessing these natural advantages, Hastings has long been selected, and celebrated, as a resort for patients suffering from affections of the chest, and tubercular disease in all its forms, but no facts have hitherto been collected to prove its salubrity, and only a vague general opinion has been formed that it is a healthy place: the state of medical science however demands more decisive evidence, for that able pathologist, Louis, has acknowledged that every previous theory which he had formed upon the statistics of diseases, or the symptoms of disease, he found incorrect when put to the test of experience. Unless the statistics of disease and death among the inhabitants of Hastings themselves, will prove the superiority of its climate, every argument adduced in its favour can be of no avail. In order therefore to ascertain how far the received opinion as to the health of the town was correct,

I have carefully examined the books of the Hastings Dispensary, during the twelve years it has been established, and classed those entries where the diseases had been registered according to the plan in the report of the Registrar General, whose first and second reports I have also used as comparisons. This collection comprises nearly 8,000 cases of disease which have received medical and surgical treatment at this institution. I have also taken advantage of and classified all the deaths, from the Registrar's book of deaths, which have occurred in the borough of Hastings, from all causes, during the four years the Registration Act has been in operation. From these united sources I am enabled to form some opinion as to the statistics of disease and death, and the prevalence or infrequency of various diseases; also to make a comparison between the salubrity of Hastings and other places.

NOTE.—The Borough comprises the whole of Hastings and St. Leonard's on Sea. The population is upwards of 11,000.

The first column contains the result of twelve years' practice of the Hastings Dispensary. The second column contains the amount of deaths, from all causes, in the Borough, during four years' registration.

<i>Epidemic and Contagious Diseases.</i>				Convulsions - - 7 47				Pneumonia - - 124 55			
				Apoplexy - - 11 33				Pleuritis . - 68 1			
Variola - - 102 21				Paralysis - - 31 5				Pleurodynia - - 13			
Varicella - - 7				Chorea - - 6				Hydrothorax - - 10 5			
Rubeola - - 135 55				Epilepsy - - 43 3				Pneumothorax - - 1			
Scarlatina - - 122 38				Vertigo - - 29				Hæmoptysis - - 17 2			
Cynanche maligna 1				Insanity - - 10				Asthma - - 53 12			
tonsillaris 78				Idiotcy - - 1				Dyspnœa - - 5 1			
trachealis 1 28				Melancholia - - 6				Phthisis - - 162 161			
parotidea 6				Hysteria - - 98				Nasal polypus - 1			
Pertussis - - 83 24				Delirium tremens - 1 1							
Aphthæ - - 15 3											
Diarrhœa - - 262				276 159							
Dysentery - - 5				<i>External Senses.</i>				<i>Organs of Circulation.</i>			
Cholera biliosa - - 2 1				Ophthalmia - - 199				Pericarditis - - 9			
Influenza - - 150 1				purulenta - 8				Carditis - - 8			
Erysipelas - - 53				Amaurosis - - 4				Aneurism - - 6			
Puerperal fever - - 1				Cataract - - 3				Syncope - - 1			
Typhus - - 7 6				Iritis - - 15				Angina pectoris - 3			
Continued fever - 434 2				Ulcer on cornea - 3				Phlebitis - - 1 2			
Remittent - - 1 4				Opacity of cornea - 4				Hypertrophy of left ventricle - - 3			
Miliary - - 3 3				Deafness - - 8				Other diseases of the heart - - 12			
Intermittent - 183 1				Aphonia - - 1				Varicose veins - 10			
Syphilis - - 59				Otitis - - 1							
				Otorrhœa - - 1							
				247							
<i>Nervous System.</i>				<i>Organs of Respiration.</i>				<i>Organs of Digestion.</i>			
Sporadic Diseases :—				Catarrh and tussis - 403				Teething - - 15 19			
Cephalitis - - 8 7				Senilis - - 16				Hare lip - - 1			
Coup de Soleil - 1				Laryngitis - - 1				Stricture of œsophagus 2			
Hydrocephalus - 23 63				Bronchitis - - 170				Hæmatemesis - 7			
— Congenital - 1								Salivation - - 5			

			<i>Organs of Generation.</i>			<i>Cutaneous Affections.</i>			
Gastritis	-	16	2	Childbed	-	6	Scabies	-	171
Enteritis	-	13	4	Miscarriage	-	4	Lepra	-	12
Tympanitis	-	1		Phlegmasia dolens	-	1	Lichen, impetigo,		
Tabes mesenterica	-	45	27	Menorrhagia	-	50	herpes	-	12
Ascites	-	8	6	Dysmenorrhœa	-	10	Porrigo	-	42
Constipation	-	287		Amenorrhœa	-	133	Psoriasis	-	36
Hæmorrhoids	-	29		Chlorosis	-	44	Tinea	-	58
Prolapsus ani	-	5		Leucorrhœa	-	20	Sycosis menti	-	1
Warts	-	1		Hydrops ovari	-	4	Diseases of skin	-	75
Hernia	-	276	6	Diseased ovary	-	4			
Colica pictonum	-	5	1	uterus	-	19			
Colica et spasm	-	28		Prolapsus	-	6			407
Dyspepsia	-	519		Polypus	-	2	<i>Diseases of uncertain seat.</i>		
Gastrodynia	-	7		Inflam. of breast	-	10	Scorbutus	-	8
Pyrosis	-	19		Paraphimosis	-	1	Hæmorrhagia	-	8
Vermes	-	177		Orchitis	-	2	Epistaxis	-	1
Diseases of stomach	2		2	Diseased prostate	-	2	Hydrops	-	73
rectum	2						Gangrena	-	4
		1512	78			312	Carcinoma	-	4
				<i>Organs of Locomotion.</i>			Fungus hæmatodes	-	1
<i>Liver and Spleen.</i>				Arthritis	-	33	Tumour	-	34
Hepatitis	-	43		Periostitis	-	8	Scrofula	-	151
Icterus	-	18		Rheum. acutus	-	28	Bronchocele	-	8
Gall-stones	-	4		chronic	-	433	Cachexia	-	15
Diseases of liver	-	11	4	Diseases of joints	-	20	Podagra	-	1
Splenitis	-	3		hip	-	40	Debility	-	125
Diseases of spleen	-	1		White swelling	-	3	Neuralgia	-	38
		80	4	Caries	-	11	Pain in head	-	69
<i>Urinary Organs.</i>				Necrosis	-	4	Periodical headache	-	5
Nephritis	-	2		Spinal disease	-	11	Malformation	-	3
Gravel and ischuria	31		1	Exostosis	-	2	Nævus	-	1
Calculus	-	13	1	Lumbar abscess	-	11	Accidents	-	350
Strangury	-	3				568	Burns	-	19
Hæmaturia	-	3		<i>Integumentary System.</i>			Chilblains	-	3
Incon. of urine	-	6		Abcess	-	178	Frostbitten	-	2
Catar. vesica	-	1		Ulcer	-	231	Bite of adder	-	1
Gonorrhœa	-	13		Fistula lachrym.	-	3	Intemperance	-	2
Hydrocele	-	16		ani	-	4	Suicide	-	3
Varicocele	-	1		Diseased bursa	-	2	Old age	-	65
Hernia humoralis	-	17		Whitlow	-	5			
Stricture of urethra	9			Carbuncle	-	4			924
Diseased testicle	-	2		Phlegmon	-	37			158
kidneys	-	9							
bladder	-	2							
		128	3			464	Total	-	7711
						6			865

Only seven cases of typhus fever have occurred in the practice of the Dispensary during the twelve years, and only six cases of death are registered as the result of this disease for the whole of Hastings. Whether these six deaths were caused by idiopathic typhus, or whether the patients were suffering from some other diseases which had reduced their strength, and thus rendered the body in a fit state for the supervention of typhoid symptoms, I am unable to learn. I should, however, think the latter supposition to be the most probable, considering

the very few cases that have occurred in the Dispensary practice. During the past year, although 1250 persons were admitted patients to this institution, not a single case of this fever was amongst them.

According to the report of the Registrar-General, the proportion of deaths arising from typhus fever in the whole kingdom is about one for every sixteen of those who die from other causes: the mortality of Hastings has been only six cases out of 865 deaths, or only in the proportion of one for every 144; so that this fatal and dreadful



malady has been nine times less frequent at Hastings than the usual average in other parts of England. It will be seen by the table that upwards of 400 cases of simple continued fever have been under medical treatment at the Dispensary during twelve years. It appears to me that one of the most fertile sources of this disease had its origin in, and was propagated by, imperfect drainage.

Formerly, an uncovered brook, called "The Bourne," acted as the common sewer of a great part of the town; and although care was taken to wash out this brook frequently by means of a stream of water let in by a floodgate from a reservoir reserved for the purpose, yet the emanations arising from partially decomposed animal and vegetable matter, in a densely populated neighbourhood, were any thing but conducive to the health of the inhabitants. The Bourne brook was covered over in the year 1834, since which period this disease has gradually decreased, and almost entirely disappeared. In the year 1840, there were only thirteen cases; and during the last year only three cases of this disease occurred in the Dispensary practice.

Upwards of 150 cases of ague have also been under treatment at the Dispensary since its establishment, and although a number of these cases came from the neighbouring villages, several of which are situated near the marshy districts, where ague is prevalent, yet many of them occurred amongst the inhabitants of the town; and doubtless the principal source of this disease also may be attributed to the same influence as that alleged as the cause of continued fever: this is, in some measure, proved by the corresponding diminution in the number of cases. During the last year, even with a much greater number of patients, only seven cases of ague were admitted. The town had no visit from that frightful and fatal disease Asiatic cholera, when so many sea-ports suffered from its ravages; although the poverty of a very large part of the population of Hastings, their crowded dwellings, and poor diet of fish, upon which they principally subsist, are circumstances which especially rendered the inhabitants liable to such a visitation: and here I would remark, in considering the statistics of a fishing-town, that

fishermen, although a hardy race, are more liable to diseases than any other class of the community. From a statistical memoir upon the influence of various professions on the health and mortality of mechanics and artisans in the prime of life, founded on the Tables of the Institution for Sick Mechanics at Wartsburgh, in Germany, from 1786 to 1831, by Dr. C. H. Fuchs, Professor of Medicine, and published at Berlin in 1835, the sickness and mortality of fishermen and sailors were found greater than among other trades. This is supposed to arise from the irregularities of their earnings, not affording them, at all times, a proper supply of wholesome food, as well as from their continued exposure to cold, wet, and various accidents.

It is calculated that between a fifth and sixth part of the entire number of deaths in temperate climates arises from consumption. Dr. Shuttuck, in the Vital Statistics of Boston (United States), says, sufficient facts are known to show that from one-fourth to one-seventh of all the deaths in the northern and middle states of America, and perhaps of the whole world, are caused by consumption.

The annual returns of the Registrar-General show that a fifth part of the mortality of England is caused by this disease.

Sir James Clark considers that a sixth of the deaths in Britain is decidedly caused by pulmonary consumption. And in Italy itself, and the south of France, it is well known that the proportion of deaths from this cause is, if anything, greater than it is in England.

To ascertain, with any degree of certainty, the number of deaths which arise from this cause amongst the inhabitants of Hastings, it is absolutely necessary to inquire minutely into every individual case that may be registered as having occurred within the limits of the borough. Unless this inquiry is carefully made, it is impossible to obtain a result at all approaching to truth; as from the great number of invalids of this description collected from all parts of the country, many of them in the last stage of consumption, it is only reasonable to expect that a large proportion of deaths from this disease will consist of those who have been injudiciously brought from a dis-

tance, many of them at a time when the case was already hopeless, and who were literally sent hither to die. But even with this large addition to the numbers, the average of deaths from this cause is not greater than in other places: and when the inhabitants are carefully distinguished from strangers, a distinction which I have had the opportunity of making, the average is found to be so much smaller than the usual amount elsewhere, that it must at once satisfy every reflecting person of the suitableness of Hastings for consumptive patients.

During the four years the Registration Act has been in operation, the entire number of deaths entered in the Registrar's books as occurring at Hastings and St. Leonard's, under the heads "Decline and Consumption," is 161 out of 865 deaths from all causes. Now this is hardly one-fifth of the mortality, or scarcely so high as the usual average for the whole of England, as proved by the reports of the Registrar-General.

But of this number 70 were entire strangers to the town, and came from a distance; and these being deducted from the 161, the balance left is only 91 deaths from this cause among the inhabitants themselves, or rather more than one for every nine from other causes: thus amounting to scarcely more than one half of the usual mortality from consumption.

But even the above numbers ought to be greatly lessened, as it is well known that nurses, and that class of persons who generally certify the death to the Registrar, are in the habit of calling every disease in which there is great wasting of the body, a decline; and therefore a great part of the above 91 cases were assuredly not tubercular phthisis. Some, indeed, which came under my own observation, were thus improperly classed. For instance, at one season of the year, a great number of persons employed in the fishing make an annual excursion to Plymouth for several weeks, to catch mackerel, during which period they are necessarily much exposed to the weather, and from this cause often have severe attacks of inflammation; at the same time, being far from home, and constantly employed, they seldom have proper medical treatment, and as a consequence they return home with dis-

ease already too far advanced for medicine to be of any avail.

During the last year, two fine fellows came under my care, as Physician to the Hastings Dispensary, precisely under the circumstances above named; one of them had had pleurisy, the other pneumonia. Both cases were too far advanced for medicine to be of service, and both gradually sunk from the effects of the disease; yet both these cases were entered as consumption, because they were chest affections; and they form a part of the 91 cases, although neither were really affected with tuberculous disease. It may be alleged that all registered reports are open to the same objection; but the following is another and greater source of fallacy, viz., that still more important class who, having resided several years at Hastings, because suitable for their health, are considered as inhabitants, but who originally came from other places, with a constitution highly predisposed already to tubercular disease.

The climate may have its effect in prolonging their lives, but not in restoring their ruined health; and thus they also contribute to swell the list. So that were all the cases not tuberculous, distinguished from those truly tuberculous, and were all who have not been born at Hastings separated from the native population, I am inclined to believe that consumption would be even less than one-half as prevalent amongst the inhabitants of Hastings as at other places.

The number of cases of hernia, 276, may perhaps appear large: most of these applicants were supplied with trusses; and it should be taken into consideration that fishermen wear out trusses very quickly, the springs becoming rusty from sea water, and the men are constantly stooping and lifting heavy weights in their employment; and if we refer to the comparative frequency of hernia according to sex and age, and also relative to the population, by F. Malgaigne (*Annales d'Hygiène publique*, July, 1840) for Paris, taking the rich and poor at the age of 21—

The poor	1 out of 28
„ middling classes	1 out of 38
„ rich	1 out of 37.

It was found also more rare among the mountainous or hilly districts than in

those of the plain, and less frequent in towns than in the country; and if we take the male population of Hastings at 1000 who would apply at the Dispensary for trusses, and allow a new truss every year for each case, it would only be one case of hernia for every 33 of this class of the population—or less than the average proportion of the poor at Paris.

During the past year, the only cases of much interest which have occurred in my own practice were a case of aneurism of the arch of the aorta, and the following case of extensive disease of the brain.

On the 5th of Jan. 1841, Richard Salmon, fisherman, applied for admission to the Dispensary: his general appearance healthy, habits temperate: he complains of constant acute pain in the left temple, from which he has suffered more or less during the last two years. States that he has been repeatedly under medical treatment, has often been bled and blistered for it, sometimes with, sometimes without benefit. He says the pain had been somewhat easier for some time past, until the 28th of last month, when, being at sea, and the weather being very cold and stormy, he experienced a sudden and severe return of the pain; was seized with cold and shivering: he came ashore, and when he arrived at home, he was very faint, sick, and entirely lost all power of moving his limbs, or, as he expressed it, "he was so benumbed with the cold, that he lost his feeling." Upon being put into a warm bed, and some stimulants being given him, he gradually felt better. At the present time complains of constant pain in the left temple; pulse natural; appetite good; tongue clean; bowels rather confined: says that both his temples often swell; and points to one part which he says is swelled at present, but which, upon careful inspection, presents no unnatural elevation. No loss of sight; no defect of memory or speech; and although he is not intelligent, he appears capable of exercising his mental faculties equally well with the generality of his class. The only peculiarity in his appearance is, that his left eye appears to project more than natural. No febrile symptoms being present, the carbonate of iron was ordered, upon the supposition that the pain was of a neuralgic cha-

racter; the bowels being kept open with magnes. sulph.: the symptoms, at first, were relieved by this treatment; but after a few days he complained that the pain was equally, or more severe, and at the same time the pulse was a little increased in frequency and fulness.

Leeches to be applied to the temples, blisters alternately behind the ear and nape of the neck.

Feb. 1st.—Pain still continues; cannot get any sleep; complains of shivering and continual feeling of cold; slight alteration in his speech; does not so quickly comprehend questions put to him; his wife says he is restless during the night, with slight convulsions; pulse weak and slow; bowels costive.

Mist. Sennæ Co., pro re nata; a seton to be put in his neck, and blisters behind the ears.

March 1st.—The above means have been continued without intermission, and without benefit. He is now partially comatose, but when roused still complains of the pain; pulse 70, very weak; bowels still costive; seton discharges freely.

Capiat. Pil. Hydr. Chlor. Co. gr. iij.; ter die.

After a few days, his mouth was affected with the mercury, but without any perceptible improvement in his symptoms, while the difficulty of speaking, and prostration of the mental powers, continued to increase. All active treatment was therefore omitted: he, however, continued to linger, with the powers of life gradually diminishing, until the 28th of August. During the last few days, the sphincters ceased to perform their functions, and he lay in a complete state of coma, only interrupted by convulsions, during a paroxysm of which he died.

*Autopsy, 36 hours after death.*—On removing the calvarium, the inner table of the skull was found exuding, rough, and covered with sharp-pointed elevations. This was particularly the case on the squamous portion of the temporal bones, the upper part of the right parietal bone, near the sagittal suture, and both the orbital plates of the frontal bone: so sharp were some of these pointed elevations that a very slight pressure of the fingers would have been sufficient for them to have

lacerated the skin. There was great adhesion between the dura mater and the skull, particularly on the left side, where the membrane was also much thickened and inflamed. On attempting to separate the dura mater from the arachnoid, the two were found strongly adherent, and this last membrane was studded with minute specks of apparently albuminous matter. Under the squamous portion of the left temporal bone, the surface of the brain, to the extent of a square inch, was covered with pus, but the suppuration did not extend into the substance of the brain. Upon cutting into the substance of the left hemisphere, the colour was paler than usual, and much softer than natural: the ventricles were full of fluid, but exhibited no abnormal appearance. Upon removing the brain from the skull, the whole of the base of the anterior and middle lobes of the left hemisphere, and the middle lobe of the right, were in a state of ramollissement. The supra-orbital plates of the frontal bone, and the greater wing of the sphenoid bone, were also found to have the same roughness, and studded with sharp points in the same manner as the calvarium.

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ON THE  
COLOURLESS CORPUSCULES,  
AND ON THE  
MOLECULES AND CYTOBLASTS  
IN THE BLOOD.

By WILLIAM ADDISON, F.L.S.

[Continued from Vol. 1, 1840-41, pp. 477 and 669.]

CASE X.—M. M. R., a stout young woman of dark complexion, aged 20, is hoarse, with slight cough and pain in the side. Several of her relations have died consumptive.—V. S. ad 3vj.

In five minutes after the bleeding there were two or three purplish patches on the surface of the blood. I removed a thin film of coagulated fibrine from one of them with the point of a needle: below it the liquor sanguinis was still fluid. Having lightly touched this fluid with the point of a finger, I transferred a large and colourless drop to a slip of glass. Great numbers of pale globules, or colourless corpuscles, were floating in it, visible to the unassisted eye; through a Coddington lens the absence of all colour in them was still

more apparent. Having placed another slip of glass upon the first, inclosing the fluid between them, I submitted it to an examination by the microscope. I found the colourless corpuscles somewhat larger than the red corpuscles with which they were compared, measuring from  $\frac{1}{800}$  to  $\frac{1}{500}$  of an inch in diameter.

I observed at the same time that the fluid, i. e. the liquor sanguinis, contained a great number of extremely minute molecules or granules, varying in size (Fig. 1, *a*), the largest of them being at least eight or ten times less than the colourless corpuscles, and they were in much greater abundance.

Whilst examining these minute bodies, I observed the coagulation of the fibrine commence. Exceedingly delicate and perfectly cylindrical filaments or fibres crossed the field of the microscope; they gradually increased in number, intersecting one another in various ways, and at length formed a complete net-work, in the meshes and angles of which the molecules and colourless corpuscles were collected and drawn together. Many molecules were situated, at distant intervals, along the course of the filaments, and the diameter of the filament being less than that of the molecules, they formed nodules upon it (Fig. 1, *b*).

In several places where the fibrine, from the unevenness of the surfaces of the glass, was abundant, the filaments were so interlaced with each other, and with the molecules and colourless corpuscles, that it was almost impossible to discriminate them from each other (Fig. 1, *c*). In other places, where the fibrine was less copious, the cylindrical character and delicacy of the fibres forming the net-work was exceedingly conspicuous.

This young woman had a slight muco-purulent expectoration, in which I found pus corpuscles of all sizes—molecules or granules, and epithelium cells.

A great number of the molecules or granules were floating independently in the mucus, and exactly resembled those seen in the blood. There were others in the interior of the pus corpuscles, situated either towards their centre, or attached to their circumference, both inside and out.

In the epithelium cells there were also a great many molecules or granules, some situated towards the margins of



the cell, others surrounding the large nucleus in the centre (Fig 2, *a*, *b*).

CASE XI.—J. J., a stout muscular man, aged 40, ill four days with acute rheumatism; wrists and ankles swollen, and very painful; countenance sallow. V.S. ad 3xxiv.

Blood drawn into four cups. Before the end of the bleeding, that drawn in the first cup exhibited a thick layer of liquor sanguinis of a yellow colour; and at the termination of the operation the blood, in all the others, had the same appearance.

The liquor sanguinis, at first a clear yellow viscid fluid, soon became turbid and mottled; in a few minutes flocculi were floating in it, rendering the fluid opaque.

After removing a thin pellicle of fibrine from the surface, with a needle, I gently touched, with the point of a finger, the fluid beneath, and placed a colourless drop between two slips of glass. On submitting it to the microscope, I found a great number of colourless corpuscles, some of them containing in their interior several exceedingly minute molecules or granules (dark specks); others with one, two, or three, larger molecules or granules (bright).

There were also floating in the fluid great numbers of loose or independent molecules, varying in size, the largest being at least eight or ten times smaller than any of the colourless corpuscles.

These minute molecules or granules had the appearance of dark specks, or bright ones with a dark circle, according to their approximation to the focus of the microscope.

The coagulation of the fibrine had not at this time commenced in the drop of liquor sanguinis under examination; very soon, however, the fibrinous filaments made their appearance, which, gradually increasing in numbers, crossed and intersected each other at various points; the molecules at the same time congregated together in various irregular groups. The filaments were not composed of strings of molecules; they were uniformly cylindrical, and formed a complete net-work during the examination.

As before, in those places where the fluid, from the unevenness of the surfaces of the two slips of glass, was abundant, the number and intricate interlacements of the fibrinous fila-

ments, inclosing and drawing together the molecules and colourless corpuscles, gave rise to the same confused appearance as is seen in any thin pellicle of fibrine; such, for instance, as first forms on the surface of buffed blood (Fig. 3).

Four days after, the man was much better; free from pain; pulse soft, 84. I should not have bled him again, but being a strong subject, and wishing to continue my investigation, I took a tea-cupful more; and immediately before the subsidence of the red corpuscles, and previous to the formation of the fibrinous pellicle, I removed a small drop, and examined it by the microscope. I found numerous red corpuscles, a great many colourless corpuscles, and at least twenty times as many molecules or granules.

I immediately added to them a little dilute acetic acid, which instantly destroyed the colour of the red corpuscles, and rendered them almost invisible; whereas the colourless corpuscles stood out in still more prominent relief, and the molecules or granules in their interior were rendered exceedingly conspicuous. In some there was one, in others two, three, or four, bright granules, precisely similar to those floating loosely in the fluid (Fig. 4, *c*).

The acid, after a few seconds, evidently had the effect of liberating the molecules or granules from the interior of the corpuscles, but it had no influence upon the molecules themselves, otherwise than rendering their presence in the interior of the colourless corpuscles more evident.

The general character of these colourless blood corpuscles, the existence of well-marked molecules or granules in their interior, and their behaviour on the application of dilute acetic acid, identify them with the pus-globules of Gulliver.

But, as the term pus denotes an abnormal and *extravascular* product, it seems inappropriate to apply the term pus corpuscle to an *intravascular* corpuscle circulating in the blood, and the existence of which, *within certain limits, is perfectly normal*. I have, therefore, retained the term colourless corpuscle.

Independently, however, of this consideration, the colourless corpuscle of the blood has the structure, and agrees in every particular with Schleiden's



"cytoblast," or the "nucleus" of Valentin and Brown.

There is, indeed, some difficulty in arriving at the true meaning of the various terms, molecules, granules, nuclei, and nucleoli, with reference to the cytoblast and the cell.

I have referred to all the authorities at hand for assistance, without finding a satisfactory description.

"The abundant gum of nascent parts of plants—such as the youngest albumen of a seed—when examined by the microscope, is seen to be turbid from the presence of minute molecules. Soon larger granules are also observed in it. Around these granules (how many, is not stated), by a kind of coagulation, larger bodies are formed—the cytoblasts—in which the above-mentioned granules are visible, as nuclei\*." Two, three, or more granules, thus form the nuclei of the cytoblast. But this account does not agree with the following taken from the same work:—

"In a pre-existing homogeneous substance, which contains the nutritive matter for the future tissue, granules appear: some of these acquire a larger size than the rest, and assume the form of nuclei, containing one or two, and sometimes three or four, smaller opaque particles, which Valentin has named nucleoli†."

Here the granules are described as assuming the form of nuclei, and as enlarging and containing nucleoli. Again, "when the cytoblast has attained its full size, a small vesicle appears on it. This enlarges and becomes the cell, in which the cytoblast is for a period still visible, either attached to its walls, or free in its cavity." (p. 47.)

"The primary cell, both in vegetables and in animals . . . contains within it another body—its nucleus . . . the nucleus containing one, two, three, or four nucleoli . . . The nucleoli are first formed, and organic matter becomes aggregated around them to constitute the nuclei. The nucleus having attained a certain size, the cell begins to be developed, and when first recognizable, is so small that the nucleus occupies nearly its entire cavity. As the cell enlarges, the nucleus remains

attached to its wall at one side." (p. 398).

"Cytoblast" and "nucleus" are synonymous terms; and yet the smaller granules within the cytoblast are called nuclei; while the granules within the "nucleus" are termed nucleoli.

I agree with Dr. Carpenter, that it is preferable to adhere to the original term "nucleus," as the use of the name "cytoblast" involves a theory, with respect to its function or office\*, which is by no means settled. The following, then, appears to be the order of the phenomena which attend the formation of the primary cell.

In the nutritive fluids of vegetables and animals, minute molecules or granules are the first visible particles. Around two, three, four, or more of these granules, the organic matter coagulates and forms the nucleus. Upon or around the nucleus more organic matter aggregates, forming the primary cell; and, as the cell enlarges, the nucleus is seen either attached to the wall of its cell or in its interior, with the granules or nucleoli within it.

CASES XII. XIII. and XIV.—M. C., a woman aged thirty, poorly with a slight cold, going about, and in every other respect quite well. Having pricked the back of the hand with the point of a needle, I received a small drop of blood on a slip of glass, and diluted it with a little weak acetic acid. I found in it several colourless corpuscles, with very distinct granules in their interior.

J. A., a man, aged forty, quite well. I proceeded as in the last case, with precisely the same result.

C. B., a young woman, aged nineteen, taken ill a month ago, with cold and sore throat; for which she lived low, and took physic. She then had a breaking-out about the mouth, with headache. She now applies for advice for inflammation about the finger. The hand is much swollen, and very red. I cannot discover any fluctuation or gathering. The pulse is quick and thrilling. Pricked the skin over the knuckle, where it was extremely tense and red, and placed a drop of blood diluted with the weak acid under the microscope. There were hundreds of large colourless corpuscles, with well-marked granules in their interior.

\* Müller's Physiology, p. 47.

† Op. citat. p. 398.

\* Principles of General and Comparative Physiology, p. 313.

Fig. 1.

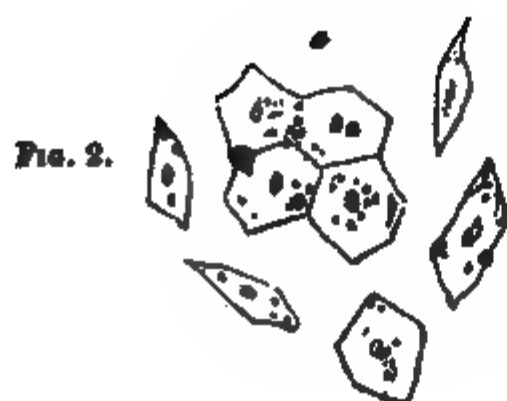


Fig. 3.

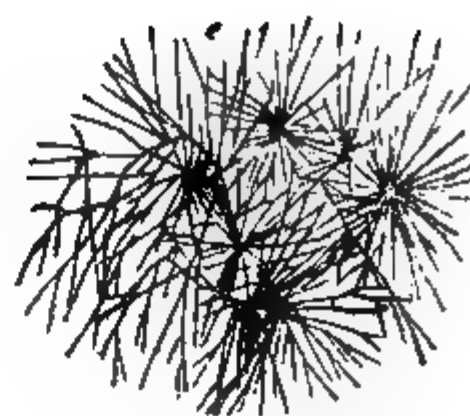
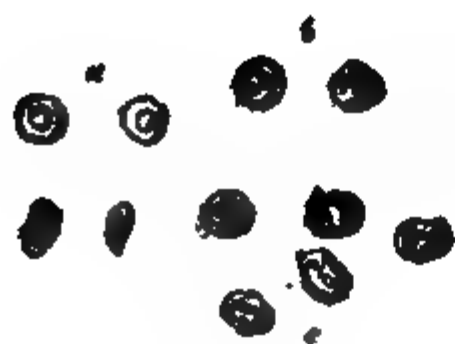


Fig. 4.

Having received another drop of blood on the slip of glass, I diluted it with a little saliva, which does not so soon destroy the colour of the red corpuscle. I then compared the two corpuscles, and I found the colourless corpuscle at least three, some were four, times the size of the red corpuscle. They appeared rough, or granulated, but did not display the distinct granules until after the addition of the acid. It is well known that, in the blood circulating in the web of a frog's foot, there are round colourless corpuscles, termed lymph globules, which have molecules or granules in their interior.

These lymph globules are strictly analogous to the colourless corpuscles in human blood, not only in their general character, colour, and structure, as developed by the microscope, but by their accumulating to an extraordinary amount in all the vessels in which inflammatory action has been excited.

I have made a great many experiments upon this subject, applying a variety of stimuli to the web. Different stimuli produce different effects upon the motion of the blood, and upon the calibre of the vessels; even the same stimulus produces different effects in different individuals. Some stimuli empty the vessels of red corpuscles; others produce congestion, and make them redder. A weak stimulus causes pulsations and oscillations in the capillaries, or retrograde motions; but amidst all the varieties of motion I have seen, there is one constant and uniform effect which I have never failed to observe, and this is *an immense accumulation of the lymph globules in all the vessels upon and around the spot to which the stimulus had been applied.* [I reserve the details of these experiments for a future communication.]

Minute molecules or granules are abundant in all animal and vegetable structures. They have been repeatedly observed, and figured by numerous writers, in the epithelium of mucous membranes, in the ciliated cylindrical epithelium of the bronchi, in chyle, in pus, and in the ova of animals and vegetables. The bodies of many animalcules are entirely filled with them, and when isolated they frequently exhibit very active motions.

I am not, however, aware that similar molecules have ever before been

noticed in human blood; and their existence in this fluid has an important bearing upon the prevailing doctrines, as to the origin of all organized structures from cells, these cells originating from nuclei, or, as they are generally designated, after Schleiden, cytoblasts.

[In the 18th No. of the British and Foreign Rev. there is a figure (1, plate 2), after Schleiden, representing the first stage of the formation of cytoblasts in organizable mucus. This figure affords a correct idea of the appearance presented by the liquor sanguinis of the blood when examined by the microscope before the coagulation of the fibrine, in the way I have pointed out].

Dr. M. Barry, in a paper lately presented to the Royal Society on Fibre, states, "that the nucleus of the blood corpuscle, in some instances, resembles a ball of twine, being actually composed, at its outer part, of a coiled filament;" and he "has seen the filament unwinding itself\*." If this account should be verified by further observations, the varying dimensions of the blood corpuscles (red and colourless?) must depend upon the length of the filament entwined around the nucleus or central molecules.

The exceedingly delicate fibrinous fibres which I have described, were perfectly independent either of the red or colourless corpuscles, or of the molecules. They did not proceed from the unwinding or uncoiling of any filament connected with the structure of either of them.

#### *Description of the Cuts.*

FIG. 1.—Part of a drop of liquor sanguinis, coagulating.

a, Molecules or granules.

b, Fibrinous fibres or filaments, with molecules, forming nodules.

c, A thicker portion of coagulated fibrine.

FIG. 2.—a, Epithelium cells or scales, with nuclei in the centre, and molecules or granules distributed around them.

b, Pus corpuscles and molecules enveloped in mucus, from the muco-purulent expectoration of Case X.

FIG. 3.—Colourless blood corpuscles, molecules, or granules, and fibres of fibrine from the liquor sanguinis of Case II.

FIG. 4.—a, The red corpuscle of the blood.

b, The colourless corpuscle.

c, The colourless corpuscle after the addition of dilute acetic acid.

d, The molecules or granules.

e, Fibres of fibrine.

\* Proceedings of the Royal Society, Dec. 1841, and Jan. 1842.

ON  
ARTIFICIAL CLIMATES,

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH : TO BE CONSIDERED UNDER  
TWO HEADS.

I. *The atmospheric treatment of the lungs.*

II. *The atmospheric treatment of the lungs and skin.*

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 48.]

*On the atmospheric treatment of chronic affections of the lungs.*

WITH a view to establish the great importance, in chronic affections of the lungs, of an atmospheric treatment directed to the organ itself, it will have sufficed to examine those symptoms which are, more than others, dependent upon atmospheric influence, while they are the most distressing to the sufferer. At the same time, it cannot be doubted that all other symptoms must be aggravated by a cause capable of producing, or of materially increasing, those of chief distress. Furthermore, it has appeared proper not only to solicit a minute attention to the whole extent to which the air may be affecting any symptoms, but to maintain that such attention should be afforded before medicinal remedies are employed for allaying local irritation, so far as it can be shown to depend on the air inhaled. While this position may be rested immovably upon the soundest principles in medicine, the argument against the employment of soothing medicines prior to trying the most soothing atmosphere, does not, of course, include those remedies which form the systematic treatment of the disorder itself.

It will often happen that a certain state of the air, however trying, will give rise to no symptoms of uneasiness, unless some morbid excitability exists in the chest; and again, we may frequently find causes conducive to such excitability to produce no symptoms of distress if the atmosphere is of a soothing character, or even moderately temperate. Thus, in the case of asthmatic persons, and others, and of children with worms, both atmospheric and gastric irritation have often to act together in order to produce dyspnoea. In such cases, by administering to the stomach anodyne medicine, or to the lungs

genial air (in the one case suppressing their sensibility to the atmospheric cause of irritation, in the other removing the cause itself), we may produce an abatement of the chest symptoms without the employment of remedies for the gastric disorder; but we shall, of course, do little towards affording permanent relief, unless proper medical treatment be directed against the malady which produces the pulmonary irritability; and in other cases, where the primary disease is seated in the chest itself, it is not for a moment doubted that the main treatment should be directed against the intrinsic causes of the local affection. The foremost importance of this systematic treatment is readily, and, as a matter of course, admitted; but leaving out of the question nostrums and hidden specifics, swallowed by so many persons to their ultimate injury, it is the temporary allaying of local symptoms, even by well-devised medicines, prior to the endeavour to soothe the lungs by administering to them a perfectly genial air, against which my argument is throughout directed. The ground taken is good, whatever are the medicines employed; but its stability becomes obvious to any person when they are opiates, or other drugs of a narcotic class. A patient himself cannot fail to discern aright the choice to be taken between the two courses; if in the one the lungs can be soothed by removing altogether the *extrinsic* cause irritating them, through the administration to the organ itself of a perfectly genial air, while, in the other case, the lungs are acted upon, not directly, but by medicines administered to the stomach; and these having no power over the atmospheric irritant, but merely suppressing, or deadening for a time the sensibility of the lungs to its influence.

As this circuitous action on the lungs, through the medium of the stomach and brain, cannot be effected without some trial to the nervous system, and as it is the nature of this system, when thus frequently acted upon, to grow less impressed by the agent, while the irritable part tends towards a greater dependence on it, we commonly find a growing need of anodynes in chronic cases. Whereas, if the soothing can be effected by a modified atmosphere, the subsidence of the morbid irritability is of a natural kind; con-

sequently its tendency to renewal continually diminishes. Upon every ground, then, the latter must be considered the preferable course. That *the Theory of Medicine* upholds this view cannot, I think, be questioned, neither can its importance, where so much suffering and disease are concerned.

We are thence led to inquire whether we have at command any efficient means for producing the desired modifications of the air respired by the lungs, without involving the skin in the same atmosphere; and whether the employment of such means have led to any practical, at all corresponding with the promised, results. On pursuing the inquiry, it will appear that measures of two different kinds seem to be indicated for invalids under different circumstances.

Prior to this inquiry, it will be right to consider the indirect part which the atmosphere plays in causing or aggravating affections of the chest. It will suffice to refer to its action generally; so as not to occupy the medical reader with a detail of particulars with which all are familiar.

We find ungenial conditions of the atmosphere to produce their indirect effects upon the chest, when in a delicate or diseased state, chiefly in three ways—first, by depriving an invalid of fresh air, exercise, and the healthful play of the spirits, through confinement within doors, if not to one or two apartments. Secondly, by chilling the surface of the body, and thus distressing the lungs, in part through their sympathy with the skin, and partly by disturbing the balance of the circulation, and also by robbing the body of warmth needed by the lungs. Thirdly, an ungenial air acts less perceptibly, and more gradually, yet to a serious extent, by compelling many to load themselves with clothing, especially in bed and when out of doors, and often with clothing which scarcely allows the air to circulate at all over the surface of the body.

With respect to the first; confinement within doors is so injurious that physicians have long found it necessary, in many cases, to require patients to go out at all hazards, exposure to an ungenial atmosphere being the smaller evil of the two; especially where a tendency to pulmonary disease

is accompanied with debility of the stomach or liver, or an easy depression of the spirits. In cases of chronic bronchitis, and of laryngitis, when once the weather has gained, as it were, the upper hand of the system, it is surprising to observe to what an extent it often causes close confinement to become the sole instrument preventing recovery. In a delicate state of the chest, arising from derangements of health quite of a temporary kind, and which would pass away with these its causes, a searching atmosphere may be found, in no small number of cases, to be the sole cause perpetuating the delicacy, by not allowing the system time to gain vigour, and its various functions to acquire that healthful play without which the local irritability cannot subside. Hence we often meet with persons who have been confined, throughout every winter, for six, eight, or even twelve years, and who, could they have been enabled to weather the climate for two or three successive years, might have become nearly, if not quite, as superior to atmospheric influences as the generality of persons in health; a fact which has of late been established by the evidences of numerous cases. And in pulmonary consumption how often does the constitution rapidly break down from the time that the invalid is entirely confined at home!

Secondly: The indirect action of the atmosphere upon the lungs, by chilling the surface of the body, is a cause of disease so powerful and frequent as to be overlooked by none, and to have met with much attention on the part of the profession. The reason why pulmonary invalids suffer much from chilliness on the skin is sufficiently obvious to the pathologist. If requiring discussion it should take its place under the second division of my subject—the atmospheric treatment of the lungs and skin. At the same time a few remarks upon it are called for here, from its connection with measures for affording ease to the lungs. Cold on the surface causes distress in the lungs, not only, in the first instance, by sympathy of feeling and action between the skin of the surface and of the lungs—and next, by tending to overload the lungs with blood driven from the surface, but it also acts to an important extent by withdrawing more animal heat from the body than can be spared without



suffering in the lungs, which require so large a stock at their own surface to meet the demand upon them of the respired air. It has to be borne in mind that while the production of animal heat, depending as it does upon vital causes, is often greatly diminished in a delicate, and especially in a diseased, state of the lungs, the demand of the respired air upon the membrane for warmth remains the same, since it, in conformity with physical laws, is unvarying. It becomes obvious, then, that if an equal quantity of warmth continues to be drawn from the surface of the body, not only will it be chilled, but the similar demand upon the lungs must chill the membrane lining the air passages. Now we have every reason to conclude that this cannot take place to any extent without causing symptoms of uneasiness and afterwards of disease.

Thirdly: We have to notice the injurious effect of the necessary remedy for the former—namely, a large quantity of clothing on the surface. This also belongs to the other division of my subject; but it may be allowable to remind the reader of the conclusions to be drawn from the numerous inquiries into the reciprocal action of the lungs and skin, which show the necessity for healthful action in the former, of a proper performance of the functions of the latter. There is reason for thinking that the clothing, which in a delicate state of health is often necessary, does itself tend to suppress the action of the skin, and the production of animal warmth. The curious experiments of Bequerel prove not only the fatal effects to warm-blooded animals of an entire suppression of the cutaneous functions, but that death is always preceded by a rapid and extreme fall of the animal temperature from the full blood-heat of the animal to within a few degrees of the temperature of the air. The reader may remember that, in conjunction with a colleague, he coated the surface of rabbits, after removing their hair, entirely over with an impervious plaster of substances, not in themselves injurious, but merely air-tight. The animals are stated to have died in a few hours, having in each case fallen greatly in temperature. As the air was about 60°, and the thick coating composed of materials which are not ready

conductors of heat, and as evaporation, the great cooling process at the skin, was entirely put a stop to, the loss of heat must have taken place chiefly from the pulmonary surface in respiration: and it proves how great that loss must be which can occasion such a fall of temperature, when any functions for the production of animal heat are disturbed. We may also gather from it evidence that a large portion, at least, of the heat is evolved while the blood is in the capillary vessels of the skin, and by a process nearly connected with its functions. Hence a suppression of these causes a great falling off in the supply of heat.

This extreme case may, I think, serve to explain many others where the same cause is acting in a minor degree. Some persons, to an extent that is almost paradoxical, appear to grow colder the more they wrap up, and especially in the feet. The distance from the centre of circulation may account for some portion of this; but where it is not relieved, but rather increased by thick coverings, some additional reason has to be found for this coldness of the extremities. As the outer covering of the feet is commonly of tanned leather, through which air can with difficulty enter to the skin, and vapour and gases make their escape from it, have we not a state produced verging towards that under the impermeable covering employed in Bequerel's experiments—namely, an increased tendency to coldness? May we not here find good reason for thinking that the development of heat in the part is checked by checking so much the action of the skin? Hence cloth boots may be warming, not only from their better confinement of the heat, but by their porous texture allowing of a more healthy play of the skin than tanned leather closely fitted to the member can permit. I have known persons who wore the modern waterproof boots, with the view of keeping the feet warm, find the sensation of oppression not compensated for by any additional warmth. But, on the contrary, the feet have been colder than ever. For such invalids I would be disposed to recommend the employment of tanned leather in their shoes, to be confined to the soles, and to a narrow edge rising not more than an inch, for keeping the feet dry; the whole of the

front, as well as the rest of the foot, being covered with cloth, instead of the part over the ankle only, as is common in cloth boots. In the same way we may, I think, find the whole surface oppressed, and yet sometimes rendered more chilly by the bulky clothing an invalid is compelled to wear, and with an adverse effect upon the lungs as its result. Compared with exposure to cold it may be the lesser of the two evils; but it is nevertheless proper to keep before our view the fact that it is trying to the system.

The employment of the modern India-rubber air-tight clothing, in the manner in which it is often used, would be noticed under a future head; but I may here remark, that all such covering, beyond a mere lappet, or very short cape for keeping rain from the shoulders, appears to me very undesirable, even for the healthiest persons. I entertain this opinion not only upon the usual ground of objection, and that a weighty one, the suppression of the perspiration, but because there seems much reason for thinking that it tends to enfeeble the production of animal heat over the whole surface; and therefore the important process also of which this is a part, namely, the separation of waste matter in the blood, in a form ready for elimination as soon as the blood comes round to the lungs. Among causes working gradually, one could hardly imagine any of a more deleterious character. That air-tight covering acts in this manner, in a greater or less degree, there is, I think, strong evidence for thinking. In proportion as they hang loosely on the body, the effect is no doubt moderated; but it is still pernicious of its kind.

Having afforded such attention as my space permits to the influence of the atmosphere, in causing or aggravating pulmonic symptoms by its direct action on the lungs, and to its indirect action on them in various ways, a few words have to be said upon the influence of impurities artificially introduced into the air. In so wide a question, with the particulars of which I shall presume the reader to be acquainted, I shall here confine myself to a few general observations. Passing over the manifestly deleterious properties of the gaseous impurities thrown into the air

in the processes of many of the arts, and by the crowding of human beings in confined and ill-ventilated spaces, as matter belonging to a future head, it is only necessary here to speak of the impurities drawn into the lungs in respiring the ordinary atmosphere of cities. Mr. Thackrah, in his work on the Employments of the Industrious Classes, to be admired for the careful observation, judgment, and benevolence, which it exhibits, appears to consider the general atmosphere of cities\* to conduce only to bronchial irritability, and not to other pulmonary diseases, but rather to lessen the advance of pulmonary consumption. In whatever degree the air of large cities may be warmer than that of the country, it may be so far less trying to lungs, but its impurities must, I conceive, greatly counterbalance any trifling difference of this kind. To such an extent as my own opportunities have reached, I have been led to view them as a serious evil; and I believe most physicians in the metropolis consider the air of London generally prejudicial in all stages of pulmonary disease.

Some time ago I visited the workshops of cutlers in Sheffield, with the hope of devising some efficient remedy for the well-known evil to which the grinders are subjected. There appeared to me no reason for doubting that the object might be attained, by improving the dust-sucking apparatus they employ, and by changing the position maintained by the body, for which purpose the grindstones would have to be set differently; but the indifference, not only of the employers I spoke to, but even of the employed, to the evil, caused me to give up the pursuit. Some of the men seemed to prefer the present advantage of the partial monopoly which the unhealthiness of the occupation tended to command! My inquiries led me to the conclusion, that no inconsiderable part of the effects on the lungs of the grinders arose from the habitually compressed state of the organ caused by the position of the body†. At the same time the cause

\* On Employments affecting Health and Longevity, 15.

† This appeared from the fact that some grindstones were provided with a blowing apparatus, which drew away the steel and stone dust, yet the effects to the workmen were only removed in

usually assigned, namely, the dust, was in most cases in full operation, and with consequences, as I learned from many workmen, of as direful a kind as is commonly reported. The evil has been attributed to the steel dust solely; but, although it has its share doubtless in the work, I have been inclined to think the dust from the stones themselves is the chief agent, since it is much greater in quantity and coarser than the steel dust, yet quite fine enough to be carried in with the breath; and as the action on the lungs is to be considered of a mechanical kind, the siliceous particles from the stones are more likely to retain their asperities and angles undissolved, and to cause more injury than even the iron of the steel. This opinion seems confirmed by a fact I learned, that fork-grinders are in an especial degree sufferers by their occupation. Now the irregular surfaces, and pointed extremities of a fork, will cause a stone to grind away with much more than proportional quickness to the wear of the broad and even stones, subjected to the equal pressure of knife blades.

The dust of cotton, wool, and flax, is well known to render certain branches of the manufactures connected with them also very injurious to the lungs, though in a less degree.

From these *extreme* effects of mechanical impurities in the air, we might be satisfied that the *smaller* proportion of particles in the ordinary atmosphere of cities would be trying, to a certain extent, to so delicate a membrane as that lining the air-passages. But we have daily evidence of the fact, especially in the metropolis, where so many acrimonious particles of smoke are also present.

To the urgent reasons for controlling by art the quantity of air respired by pulmonary invalids, we have here added the expediency of endeavouring to separate from it particles of solid matter by mechanical or other means.

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part. In some cases this could be accounted for by the rude construction of the apparatus, and the carelessness of the men in using it. But in other instances I was satisfied that the removal of the dust was complete, and still the occupation was injurious, though in a less degree, even to those who were quite sober men. That this remaining effect was caused by the position, the workmen themselves were of opinion.

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## HÆMORRHAGE FROM EXTRACTION OF TEETH.

*To the Editor of the Medical Gazette.*

SIR,

IN your number of April 1, a case of alarming hæmorrhage consequent upon the extraction of a tooth, is reported from a communication of Mr. Davenport, of Eltham.

A somewhat analogous case occurred under my own observation about three years since. The subject of it was a stout and healthy young man, who applied to me for the removal of a molar tooth from the lower jaw, which was effected without any difficulty. The following day, he presented himself, saying that the bleeding had continued the whole of the day and the succeeding night; and from his appearance there could be no doubt of his having lost a considerable quantity of blood. Various styptics were applied, and firm pressure was maintained by filling the cavity with lint soaked in tr. ferr. sesquichlorid., and placing over this a piece of cork, which was kept in close contact with the upper jaw by a bandage fastened over the head and underneath the chin.

These means, however, were insufficient to restrain the hæmorrhage, for on the third morning after extraction, on removing the lint and coagula from the socket, arterial blood issued forth, *per saltum*, into the mouth.

I now determined upon using the actual cautery; and for this purpose I procured a common knitting-needle, bent at its extremity for the length of an inch to a right angle, and having brought it to a red heat, I applied it to the bottom of the cavity.

The success of this measure was immediate and complete, and but little pain was caused by its application.

It is worthy of remark, that in this, as in Mr. Davenport's case, the hæmorrhage ensued upon extraction from the lower jaw; attributable, no doubt, to the larger size of the arteries in the lower than in the upper jaw.

I should not have troubled you with this communication, but Mr. Davenport having expressed a desire to be informed by your readers of any means more likely to be successful than those usually resorted to in such cases, I beg to suggest the above-described plan, which, from its having succeeded so

well in my own case, I can recommend as worthy of adoption when more ordinary means have been found unavailing.—I am, sir,

Your obedient servant,  
HENRY CHURCHILL, M.R.C.S.  
Stockwell Common, April 8, 1842.

#### ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

*The Elements of Materia Medica and Therapeutics.* By JONATHAN PEREIRA, M.D. F.R.S. and L.S.; Licentiate of the Royal College of Physicians in London; Member of the Royal College of Surgeons; &c. &c. 2 vols. 2d edition, enlarged and improved. London: Longman and Co. 1842.

FAVOURABLY as we thought of the first edition of this work, we did not expect that a second would have been so soon required, knowing that a large impression had been struck off. The sale, however, it would appear, has been more commensurate with the merit of the volumes than is sometimes the case, and we are glad to have Dr. Pereira once more before us. We find many improvements. A large number of woodcuts have been added, and numerous alterations for the better made in the typography. The processes in all the British Pharmacopœias have been described more fully, besides which additional articles are given on a variety of subjects connected with therapeutics: among which we may enumerate climate, diet, heat, light, electricity, magnetism, &c. &c.

We had no idea that the work admitted of being so much improved, and we heartily wish the learned author all the success which his zeal and activity so eminently deserve.

*A Dispensatory, or Commentary on the Pharmacopœias of Great Britain: comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the articles of the Materia Medica.* By ROBERT CHRISTISON, M.D., F.R.S.E.; Professor of Materia Medica in the University of Edinburgh. Edinburgh: Adam and Charles Black. London: Longman and Co. 1842.

THIS work, as the title implies, is not a mere commentary on the Edinburgh

Pharmacopœia, but a commentary, and a most instructive one, on the Pharmacopœias of the three capitals. The plan, too, is essentially different from that adopted by Dr. Duncan. The introductory treatise on pharmacy is omitted; and instead of being divided into different parts, as has hitherto been done in our various Dispensatories, each individual subject has been discussed under a single head: a short but complete treatise being given on each article of the materia medica. Great care has evidently been bestowed upon the physiological actions and therapeutic qualities of the drugs. It is a most valuable addition to our works upon Materia Medica and Pharmacy.

*Principles of Human Physiology, with their chief applications to Pathology, Hygiene, and Forensic Medicine, especially designed for the use of Students.* By WILLIAM CARPENTER, M.D.; Lecturer on Physiology in the Bristol Medical School. London: Churchill, 1842.

THE “Bristol Medical School” is fortunate in having such a lecturer as Dr. Carpenter, whose most elaborate and important work now lies before us. In the introduction we find the connexion of physiology with the other departments of medical science clearly pointed out, and the use it is of to pathology and treatment satisfactorily elucidated and explained. Another point forcibly alluded to is the bearing of statistics upon medicine—a circumstance of great importance to be kept in mind, and generally too much neglected.

Dr. Carpenter next proceeds, in his first chapter, to trace the rank occupied by our race in the scale of created beings, which gives him an opportunity of referring to the lower as well as the higher classes of the vegetable and animal worlds. The functions of the body occupy the second chapter, and they are all passed in general review before entering upon them in detail, as he afterwards proceeds to do. The nervous system, as a matter of course, occupies a large share of his attention; and he fully enters into the views of Sir Charles Bell and Dr. Marshall Hall.

All the most interesting points connected with digestion are made to oc-

occupy a chapter on that important subject, and the views both of the continental and American physiologists brought before us: in short, the most important facts connected with the nervous system, muscular fibre, organic functions, and reproduction, successively occupy his attention, and the subjects are elucidated by numerous, and some of them very beautiful, illustrations. We may add too, though last not least, that the student will find an excellent and comprehensive index. We have been anxious to bring this work as early as possible before our readers, not pretending to give them any of the information which it contains (for with respect to a volume of this nature to do this effectually would require several entire numbers of our journal), but merely pointing out to them the abundant fountain whence they may draw for themselves.

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## MEDICAL GAZETTE.

Friday, April 15, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

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## EMENDATIONS OF THE NEW POOR-LAW.

In our number of March 25, we commented on the remarkable inefficiency of the medical relief doled out to the poor under the provisions of the new Act. Many instances, besides those which we quoted, are to be found in the valuable pamphlet on the administration of medical relief to the poor, published by the Provincial Medical and Surgical Association.

Thus, in the Shipston-upon Stour Union, the Guardians entrusted one medical officer with three districts, which "contained 30 parishes, 15,000 inhabitants, and extended 15 miles by 14; the greatest distance from the medical officer being 10 or 12 miles."

The next year they gave him *the whole Union*, containing a population of 19,030.

The third year they deprived him of one of the four districts; and in the fourth year they were obliged to appoint a separate practitioner to each of the four divisions. We may imagine what a stormy height the complaints of inefficiency must have reached, when the Board was obliged to deviate into common sense, and make it less impossible for the indigent poor to obtain advice, though at an increased charge of several pounds per annum!

The Wheatenhurst Union, with a population of 7770, might have enjoyed the services of two established practitioners for 150 guineas a year, and £1 per case of midwifery. The Assistant-Commissioner thought this too high; fixed the salary at £100, and the reward of midwifery at ten shillings the case; and made the Board advertise.

"One reply was received from a perfect stranger, accepting the offer; and he was appointed to the care of the whole Union, extending, in its longest diameter, 14 miles. His place of residence was determined by the Board. He actually undertook his duties without a horse, or even a catheter."

The unfortunate surgeon soon wished to resign, but this was not in the bond. The Shylocks of Wheatenhurst were determined to have their pound of flesh; indeed, if the stranger continued to perform his duties without a horse, they must have obtained a good many, for walk round the 14 parishes of this Union would be wonderfully attenuating. At the end of his year, of course, he departed: his successor had more fortitude, and remained two. And thus ends the history of the Wheatenhurst Union in the pamphlet: we should like to see its continuation.

In the Crickhowell Union, a young man, who did not understand a word of Welsh, was appointed to one half of the Union, "where you may go for miles before you could meet with a



person who could interpret between the medical man and his patient." In a case mentioned by Dr. Yelloly, unjust economy seems to have reached the limits where folly borders on insanity.

"A large parish in West Ham Union, containing 4000 inhabitants, was previously provided with drugs at the expense of the parish, a dispenser engaged at a small salary to make them up, and attendance on the patients given by the resident surgeon gratuitously; but yet, though the expense of the drugs alone amounted to near £70 per annum, the Guardians felt themselves justified in contracting for drugs and attendance together, at £50 per annum!"

How distorted must be the views of those who can allow the work to be performed for so inadequate a sum; how unenviable must be the condition of the profession, when qualified persons can be found to undertake the task! Mr. Farr has shown that, on the average of several counties, the rate of remuneration is 3s. 3½d. per case; while in English jails it is 13s. 7d., and in Irish ones still higher.

Mr. Farr's explanation of this difference appears to be correct. The consequences of neglecting the health of prisoners are so glaring, that they cannot escape observation. The report of a jail fever carrying off a score of victims excites both alarm and indignation; while deaths from neglect in a scattered district make no general impression.

We may add, however, that the enormous abuses interwoven with the new system have been practised on so great a scale, and persevered in with so much hardihood, that they have at length roused public attention; and though the victims of medical relief have not yet found their Howard, the efforts of philanthropists have been crowned with a certain degree of success. Our readers will have observed

from Mr. Guthrie's letter, and the papers of the Poor-Law Commissioners, inserted in our number for March 25th, that some of the more prominent iniquities stand a good chance of being moderated. We have not killed the snake, but we have scotched it.

Mr. Guthrie's letter contains a good abstract of the mitigated code, with a favourable commentary upon it. In the first place, the system of tender is abolished, in so far as it is a system of underbidding. The Board of Guardians will fix the sum for a district, and though various practitioners may offer to fill the place, the Board is to pay the sum fixed in its own original notice; so that the contest will turn on the respective merits of the practitioners, and not on their readiness to undersell each other. We shall rarely hear, after this, of the threat of bringing down "talented young men from London" to lower still farther the slender gains of the country practitioner. The appointments, too, are to be permanent, not yearly—another great improvement. The medical officers to be appointed in future must hold one of four different qualifications, enumerated by the Commissioners. The first three consist of the diploma of the London College of Surgeons, together with

(a.) An English medical degree, or license from the Royal College of Physicians of London; or,

(b.) A license from the Society of Apothecaries; or,

(c.) Actual practice as an apothecary on August 1, 1815.

In all these instances, it will be observed that a double qualification is required; in the fourth, only one is mentioned, namely, a warrant as surgeon (or assistant-surgeon) in the army, navy, or East India Company's service, or as apothecary in the army, provided the warrant is dated before August the 1st, 1826. We presume that in all

these instances the candidate examined by the public board was already a member of the College or Hall, so that this fourth qualification is likewise a double one.

The Commissioners, in their commentary, observe, that they have limited their qualifications to those proceeding from an English source; but if a practitioner possesses an English qualification as physician or apothecary, and a surgical one from Ireland or Scotland, they will allow him to be elected, on application from the Guardians, for that purpose. This seems right; for the medical barriers set up between different parts of the empire are usually too unyielding; so that medical practitioners and ardent spirits are among the articles which most forcibly remind us that these islands were once divided into three separate kingdoms.

The principal operations of surgery are to be paid for extra, provided the operator has obtained what Mr. Guthrie calls a "consultation certificate;" that is, a certificate that the amputation or trephining was necessary, from a member of the College of Surgeons or Physicians. It does not appear that this certificate is required for the operation for strangulated hernia. The remuneration is fixed in a schedule given by the Commissioners. The fee for a labour is to vary from ten shillings to two pounds, according to circumstances. Mr. Guthrie believes that the fee is to be a pound when the distance of the patient from the surgeon, in an ordinary labour, exceeds two miles.

The maximum area and population of a district to be allotted to any one medical officer are fixed; the former at 15,000 acres, the latter at 15,000 inhabitants. We entirely agree with Mr. Guthrie in thinking both these quantities too large by one half. He is of opinion that no Union surgeon should

be made to go more than three miles from his own door, if possible.

Mr. Guthrie makes some judicious observations on the necessity of a general principle being established for the remuneration of Union surgeons. As no such principle is acted on generally, by Boards of Guardians, the practitioner, whose wants compel him to take whatever they may think proper to offer, is often paid only a half or a third of what he ought to receive, even according to the economical computations contained in the reports of the Assistant-Commissioners. When a man is paid so ridiculously little for his services, what follows? Take the answer in the plain words of Mr. Guthrie:—"They are, therefore, not performed, and the poor have only the semblance of medical assistance, but not the reality, in many parts of the kingdom; and they never will have it until a principle of remuneration for medical services shall be laid down, and enforced by the Poor-Law Commissioners."

Wherever there is a workhouse, says Mr. Guthrie, it should be paid for separately, at the rate of ten pounds per annum for every fifty persons, and seven pounds for drugs for the same number. It must be confessed that this recommendation (whoever may have devised it) does not err on the side of extravagance. Ninepence for the daily visit will not startle the most economic Board, or stimulate it into advertising for a cheaper man.

Two other articles in the new regulations, both worthy of approbation, remain to be noticed. By one it is ordered that every Union surgeon is to give into the Board of Guardians the name of some qualified practitioner, to whom application may be made, in case of his own absence from home. By the other, Boards of Guardians are directed to give tickets every six months to permanently sick or disabled persons, en-

titling them to medical aid without any order from the relieving officer.

In a word, these new regulations are good, as far as they go; they are a series of victories gained by good feeling and good sense over the harsh Malthusianism which has stamped the working of the New Act. May the press still continue to advocate the cause of humanity, and may we have reason to say to the Poor-Law Commissioners—

*Lenior et melior fit accedente senectâ !*

#### UNIVERSITY OF LONDON.

WE cannot but regard the course which the Senate of that institution has lately been pursuing, as betraying a strange vacillation and inconsistency of purpose, and as being calculated seriously to injure its character and impair its utility. It would appear that in the beginning of the present winter\* the Chancellor of the Exchequer issued a recommendation to the Senate to revise their estimate of expenditure, with a view more particularly to a reduction in the amount of salaries, on the pretext that the late House of Commons had condemned that expenditure as being excessive. The reply of the Senate, adopted after full and mature deliberation,† was, that "They are not prepared to recommend any reduction in the estimate, and fear that a diminution in the inducements which they have it in their power to offer to candidates for the office of examiners might be attended with injury to the institution." On receiving this reply, the Chancellor of the Exchequer informed them‡ that he would, of his own authority, make a reduction of £800 in that portion of the grant which regards the salaries. The announcement of this sudden curtailment of their resources induced the senate at once to abandon their former position; thus pleading guilty to the charge so often made against them by their adversaries, both in and out of Parliament, of having abused their powers by bestowing on their principal examiners salaries

very disproportioned to the amount and to the importance of the duties they performed. Their eyes appeared on a sudden to be opened to the new light which dawned upon them, and they set about effecting a complete alteration in the former scale of salaries. The largest reduction has been made in the salaries of the examiners in the principal branches of medicine; and in one department, that of physiology and comparative anatomy, in which the choice of men of eminence is still more limited, they have cut down the salary of the examiner almost to one-third of that which they had hitherto assigned to it, while they have reduced only to a very small extent those of the examiners in classics and mathematics, to fill whose offices it is much more easy to find a great number of candidates of competent abilities. The only course which the Senate could have pursued, consistently with the opinion they had so recently expressed to the Chancellor of the Exchequer, that the scale of salaries originally established was the best for the purposes of the University, was to make an equable reduction in all the salaries, so as to preserve among them the same relative proportion as at first. Instead of this, while they have diminished the salaries of the examiners in classics and in mathematics from £200 to £175, they have reduced those of the examiners in anatomy, in surgery, and in medicine, from £250 to £175, and that of the examiner in physiology and comparative anatomy from £250 to £100. It is unnecessary to point out to those who form a just appreciation of the value of these fundamental branches of medical education, to what extent such a disparagement of these essential studies will operate in injuring the character of the medical degrees conferred by this University.

We have heard that the resolution, by which the importance of physiology and comparative anatomy has been so strangely depreciated, was passed at a very small meeting, without previous notice; and the measure, thus precipitately carried, was acted upon so promptly as to allow no opportunity of remonstrance from the other members, no doubt composing a large majority of the Senate, who disapprove of the measure. Its necessary consequence has been the retirement of the exa-

\* Letter of Mr. Goulburn, Nov. 25th, 1841.

† Dec. 8, 1841.

‡ Dec. 23, 1841.

miner, whose office has been thus so preposterously lowered from the rank hitherto assigned it. The following letter from Dr. Roget, to the Registrar of the University, expresses the reasons he gives for thus retiring:—

Bernard Street, Russell Square,  
Feb. 19th, 1842.

Sir,—In answer to the request of the Senate, that I would inform you whether I am willing to continue my services as examiner in the ensuing year, I beg you will state to them that the new scale of salaries which the Senate have adopted is so different from that to which they have long adhered, which was so entirely approved by the Government, and which the Senate had so recently determined ought to remain unaltered; and especially as, in that new arrangement, the importance of the examinations in physiology and comparative anatomy is placed so far below that of the other branches of medical study, to which that department had hitherto, from the first, been considered by the Senate as being of equal importance; and as my own opinion remains unchanged with respect to the estimation in which a knowledge of physiology and comparative anatomy ought to be held as a qualification for our medical degrees, I consider that the same services as those which I have hitherto been happy to render the University as examiner in these branches, are no longer desired, and I accordingly decline to tender them. If, at some future period, the views of the Senate in this respect should again be altered, I shall ever be ready to renew those exertions to promote the objects of the University.

I am, sir,

Your obedient servant,  
P. M. ROGET.

R. W. Rothman, Esq., &c. &c.

#### COLLEGE OF PHYSICIANS.

SENIOR AND JUNIOR FELLOWS.

*To the Editor of the Medical Gazette.*

SIR,

In your number for April 8, 1842, which has just reached me, under the head "Proposed Changes in the College of Physicians," it is stated, "that all who enter the College are to become 'Members;' by whom and from among whom the Fellows are to be chosen. This is the kind of change we have often advocated in the MEDICAL GAZETTE; embracing, as it does, the abolition of the obnoxious appellation of "Licentiate,"

and giving to all certain rights and privileges as *bona fide* Members of the Corporation."

Now, sir, I have for long been of opinion that the Members of the College should be divided into two classes, under the designation of Senior Fellows, and Junior Fellows: thus not only would the obnoxious appellation of "Licentiate" be done away with, but also the equivocal and hardly less obnoxious appellation of "Member;" a name which has for many years been assumed by the Licentiates—as the titles of numerous medical works can testify.

For the appellations I propose, there is at least an excellent precedent in the division of the Fellows of some of the Colleges at Cambridge into senior and junior; as, for example, at St. John's, Trinity, and King's College.—I remain, sir,

Your obedient servant,

A PHYSICIAN.

April 1842.

#### ARRESTING OF HÆMORRHAGE.

*To the Editor of the Medical Gazette.*

SIR,

YOUR correspondent, Mr. Davenport, wishes to be informed of some remedy for the suppression of bleeding after the extraction of a tooth. I beg leave to say that, during a practice of thirty years, I have had several cases of continued bleeding after the extraction of teeth, and have always succeeded in arresting the hæmorrhage by plugging up the socket with a soft cork, nicely shaped, and previously dipped in the undiluted sulphuric acid; and in no one instance have I had to repeat the application.

I am, sir,

Your obedient servant,

THOMAS SILVESTER.

West Bromwich, Staffordshire,  
April 12, 1842.

*To the Editor of the Medical Gazette.*

SIR,

IN cases of serious and alarming hæmorrhage, arising from apparently trivial causes (as in Mr. Davenport's case subsequent to the extraction of a molar tooth, reported in the GAZETTE of April 1st), I imagine that we should experience much less difficulty in restraining it if general treatment was employed as well as local. From what I can learn, these cases occur generally in those persons who are prone to the hæmorrhagiæ. Why not treat them, therefore, upon the same principles as the nosological hæmorrhages? Some cases might warrant the employment of the lancet, administration of the potassio-tartrate of antimony, saline aperients, &c.; others would require acetate of lead, with opium and acetic acid; sulphuric acid, with

or without quinine; sesquichloride of iron, &c.—as the discriminating practitioner might deem best adapted.

Of local means in restraining hæmorrhage from alveolar cavities, pressure is, undoubtedly, the best, and most successful, when the continuance of the pressure is superintended by the medical attendant. Patients are not of themselves sufficiently persevering, but too anxious or curious to ascertain whether the means are or are not successful. The cavity might be filled with pounded ice, or cold water applied to the head by means of shower bath, with advantage.

Should the above suggestions be deemed worthy a corner of the *MEDICAL GAZETTE*, their insertion would much oblige

Your obedient servant,  
E. R.

April 5, 1842.

*To the Editor of the Medical Gazette.*

SIR,

HAVING read, in some late numbers of your very excellent medical journal, an account of two cases of hæmorrhage after the extraction of a tooth, one of which unfortunately proved fatal, from its being complicated with a hæmorrhagic diathesis; and the other nearly so, or at least to that extent to demand a consultation, I beg to forward a short description of that which I consider to be the most effectual plan of any that I have ever heard, or read of, for suppressing this most troublesome and dangerous bleeding. In fact there are few cases, if any, of this interesting kind of hæmorrhage that may not be restrained by the following means.

Take a cork, of sufficient length, and of the exact size of the tooth extracted, out of which cut a V, or triangular-shaped piece, and place it over the parts from whence the bleeding proceeds, having previously filled the dental cavity with a small, yet firm, pledget of lint, dipped in the muriated tincture of iron; and if, after this, the hæmorrhage is not controlled, depend upon it it is owing to the abuse, and not the use, of the means above mentioned; for its advantages over any other extant are so evident, that no one can for a moment doubt the certainty with which it acts. The ergot of rye, in a case where there is anything of a hæmorrhagic diathesis suspected, should be given to its fullest extent, for reasons which I will give, with your permission, in a future communication upon the properties of this drug.

I am, sir,

Your obedient servant,  
JEPHTHA HUSSEY,  
M.R.C.S.L.

Liverpool, April 12, 1842.

P.S.—It is unnecessary almost to add that pressure by closing the tooth is requisite in using the cork, as stated above.—J. R.

## APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, April 7, 1842.*

L. Buckell, Chichester.—S. Barnett, Stourport.—T. Swain.—W. Shacklock, Leeds.—J. Hampage, Bristol.—J. N. Greensill, Hurtlebury.

## A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, April 2, 1842.

Small Pox .....	3
Measles .....	23
Scarlatina .....	8
Whooping Cough .....	49
Croup .....	9
Thrush .....	0
Diarrhoea .....	2
Dysentery .....	1
Cholera .....	0
Influenza .....	3
Typhus .....	19
Erysipelas .....	5
Syphilis .....	3
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	140
Diseases of the Lungs, and other Organs of Respiration .....	252
Diseases of the Heart and Blood-vessels ....	20
Diseases of the Stomach, Liver, and other Organs of Digestion .....	48
Diseases of the Kidneys, &c. ....	11
Childbed .....	7
Ovarian Dropsy .....	2
Disease of Uterus, &c. ....	0
Rheumatism .....	0
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	120
Old Age or Natural Decay .....	53
Deaths by Violence, Privation, or Intemperance .....	38
Causes not specified .....	13
Deaths from all Causes .....	832

## METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.*

April	THERMOMETER.	BAROMETER.
Wednesday 6	from 22 to 50	30.09 to 29.92
Thursday . 7	32 52	29.76 29.83
Friday . . . 8	31 51	29.94 30.11
Saturday . . 9	34 48	30.19 30.20
Sunday . . . 10	28 51	30.26 30.19
Monday . . . 11	35 47	30.15 30.11
Tuesday . . 12	29 44	30.07 30.01

Wind, N. and N.E.

The 6th, clear. The 7th, morning overcast, noon clear, evening cloudy. The 8th, morning cloudy, otherwise clear. The 9th, clear. The 10th, overcast generally. The 11th, generally clear, a shower of rain about noon. The 12th, generally cloudy, a little rain fell about 11 h. 30 m. A.M.

Amount of rain fallen since the 17th ult. to the 12th inst. one inch and one tenth of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.



# THE LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

**Medicine and the Collateral Sciences.**

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FRIDAY, APRIL 22, 1842.

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## CLINICAL LECTURE

ON

### DIABETES MELLITUS,

*Delivered at King's College Hospital,  
Jan. 12, 1842,*

By GEORGE BUDD, M.D., F.R.S.,  
Professor of Medicine.

GENTLEMEN,—Diabetes mellitus—the disease I have chosen as the subject of my remarks to-day—has always seemed to me of especial interest, not only from the remarkable fact—a fact fit to command the attention of the most indifferent—that the urine in this disease contains habitually a large quantity of sugar; but also from its showing, by an extreme case, the great importance of studying urinary disorders, and from its displaying the kind and degree of insight into pathology, which chemistry is likely to give us. You have had abundant opportunity of making yourselves familiar with its ordinary symptoms, in the case of Joseph Hawkesworth, who has been in the hospital under my care since the 8th of October.

He is a painter and glazier, 37 years of age, of middle stature, and square athletic form; and has always resided in Greenwich.

His habits have been very temperate; and he had no illness that he can recollect until 13 years ago, when he was laid up six months by an attack of rheumatic fever. He recovered perfectly, and again enjoyed good health, and was a strong, robust man, until the summer of 1840, when he had painter's colic, which lasted, off and on, for two months. From this time his health was again good, until the beginning of last September (about a month before his admission to the hospital), when he became thirsty, and his mouth and tongue hot. He had also great craving for victuals. About the same time he remarked that he made a greater quantity of water than he

751.—xxx.

used to do, and that he was obliged to get out many times in the night to pass it. These symptoms continued, and he lost flesh and strength.

When he was brought under our notice his limbs were still tolerably muscular; his complexion was of a peculiar sallow, or straw colour; his skin harsh, dry, and wrinkled; his tongue, moist, and covered with a thick, yellowish brown, pasty coat. He had a very craving appetite, and much thirst; and passed daily about 10 pints of urine, which was slightly acid, very transparent, and free from sediment, of a light amber colour, and of sp. gr. 1035. His bowels were costive, and he complained of a sensation of coldness across the belly, with occasional aching pains there. He had no pain or apparent ailment any where else, was free from fever, and slept well.

At this time he offered a type of uncomplicated diabetes. The disease generally commences obscurely, and in most cases the first symptom that attracts the patient's attention is inordinate secretion of urine, and frequent desire to pass it. The urine is always of a pale straw colour, and generally very transparent. It has often been remarked to have a peculiar faint smell, which has been compared to that of sweet hay or milk; but our senses are not fine enough to detect any such peculiarity in the urine of Hawkesworth. The quantity of urine passed daily is always very much above the natural standard. Instead of 35 or 40 ounces, which is about the average of health, the patient, before he has been put under treatment, generally passes as much as 10 or 12 pints, and occasionally twice or even three times as much.

The urine is not only increased in quantity, but, contrary to what happens in healthy states of the system, in which increase in quantity is compensated by diminution of density, it is increased in density also. Instead of falling within 1010 and 1030, which are, probably, the limits of

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health, the sp. gr. usually ranges between 1035 and 1045; and in some instances it attains the extraordinary height of 1055.

From increase in the quantity of urine, and likewise in its density, we might, of course, infer that there is augmentation of the amount of solid matter discharged.

The average daily discharge of solids by the urine, in a person well nourished and in a high state of health and vigour, has been estimated by Dr. Christison at two and a half ounces, of which nearly one half is urea.

On the 11th of October, three days after his admission to the hospital, Hawkesworth passed, in the course of 24 hours, 10 imperial pints of urine, of sp. gr. 1040. In his chapter on diabetes, Dr. Prout has inserted a table, constructed by the late Dr. Henry, showing the quantity of solid extract obtained by evaporating a wine-pint, or 16 ounces of urine, for every degree of density from 1020 to 1050. Calculating from this table, it appears that Hawkesworth passed, on the day in question, nearly 20 ounces, or more than a pound and a half, of solid matter, in his urine.

We arrive, then, very readily at the fact, that, in diabetes, a large quantity of liquid and of solids passes off from the system as urine. Another fundamental fact in the pathology of diabetes, is, that the chief part of the solid matter of the urine—in fact, almost all the excess above the natural quantity of solids—consists of sugar, which resembles in its properties the *low* sugar of grapes.

It was at one time supposed that urea was entirely wanting in diabetic urine; but this opinion has lately been shown to be incorrect. Mr. Macgregor, Dr. Christison, and M. Bouchardat, have not only succeeded in obtaining urea from diabetic urine, but they seem to have established that the quantity of this principle passed daily is more frequently above the healthy standard than below it; a fact which is connected with the highly animalised regimen, which is a fundamental part of the treatment of diabetes. According to M. Bouchardat, the quantity of urea, as in health, is proportioned to the quantity of azotised food which the patient consumes.

Free lactic acid and lithic acid are also found in diabetic urine, together with the ordinary saline ingredients, which, according to Dr. Prout, are nearly in the same relative proportions as in health.

It would seem, then, as stated by Dr. Christison, that, except in advanced stages of the disease, or when, as sometimes happens, this is complicated by granular degeneration of the kidneys, the urine may be considered healthy urine with the addition of so much sugar.

It was at one time supposed that the

sugar found in the urine in diabetes was produced by disordered action of the kidneys; but this supposition has been lately disproved by the interesting discovery that sugar exists in the blood likewise. Many physicians have, indeed, failed to discover sugar in the blood of diabetic persons; but its existence in that fluid, which was maintained in the last century by Dr. Rollo, was ascertained, three or four years ago, by Dr. Maitland, who succeeded in obtaining crystals of pure sugar from the blood of a diabetic patient. Since that time sugar has been found in the blood of persons affected with diabetes, by Mr. Macgregor, Dr. Christison, M. Bouchardat, and others.

In some cases, however, the quantity of sugar found in the blood has been extremely small. It would appear, from some analyses made by M. Bouchardat, that this quantity varies with the time at which the blood is drawn, and that it is greatest in blood taken soon after the act of digestion.

And this naturally leads me to another fact recently discovered, which, by tracing the evil to its source, completes the chain of evidence by which chemistry has thrown so much light on the pathology of diabetes. I speak now of the discovery that in diabetic persons sugar is formed in abundance in the stomach by the process of digestion, and that it may be detected by fermentation or crystallization, in matters vomited after digestion has commenced. This most interesting discovery was first made by Mr. Macgregor, and has since been confirmed by Bouchardat. It is clear, therefore, since the sugar is formed in the stomach, that the blood must be the channel through which it finds its way into the urine. From the fact, that the quantity of sugar found in the blood of diabetic patients is often small, we must not conclude that all the sugar in the urine has not existed, as sugar, in the blood. The reason why a small quantity only is found is, that it passes off very readily by the kidneys, and, consequently, cannot accumulate in the blood; and that the quantity actually present in that fluid is diffused through its whole mass. The same thing happens for many other agents, which find their way to the kidneys through the same channel. The urine of animals poisoned with arsenic or antimony soon becomes much loaded with these substances; but, nevertheless, if the subject of experiment survive this period for a few hours, it often happens that not a particle of the poison can be detected in its blood. This was ascertained, over and over again, by M. Orfila, in his interesting series of researches on the action, and mode of detection, of these poisons.

Urea offers another case in point. A large quantity of this principle exists naturally in the urine, while its presence in the

blood of a healthy person can scarcely be detected. But, notwithstanding this, it is well established, that urea is not *formed* by the act of secretion, but that the whole amount of it found in the urine exists previously, as urea, in the blood. Passing off in the urine as fast as it is produced, no accumulation takes place, so that little can be found in the blood at any one time. It is quite clear from these considerations, that the sugar in diabetic urine is not formed by the kidneys, but merely eliminated by them; and since this urine contains no other morbid principle, and since the other solid ingredients are in nearly the same proportions as in health, that diabetes can in nowise be considered a disease of the kidneys.

This view is confirmed by anatomy. The kidneys of persons who have died of diabetes are occasionally found somewhat congested; but they exhibit no appearances that might serve to characterize the disease. In some instances they are perfectly healthy. In a patient of mine, who died in the hospital last year of this disease, they were examined under the microscope by Mr. Bowman; but, notwithstanding his familiarity with the microscopic characters of the organ, he could detect no deviation whatever from its natural texture.

The evidence, then, seems complete, that, in diabetes, sugar is formed in the stomach from all substances capable of being readily converted into it—that the sugar so formed is absorbed into the blood—and that from the blood it passes off in the urine, and, perhaps, in other secretions. The quantity of sugar formed in the stomach is, as might have been anticipated, very much increased by a vegetable diet. It has been long known that, under such a diet, the quantity of sugar in the urine is much increased, and all the symptoms of diabetes are much aggravated; and, on the other hand, that by restricting the patient to a diet consisting exclusively of animal food, or of aliments not easily convertible into sugar, the quantity of sugar in the urine is immediately reduced, and the progress of the disease stayed.

We are now in a condition to explain many of the most striking symptoms of the disease.

The conversion of a large portion of the food into sugar, which is not assimilated, but passes off from the body again in the excretions, explains both the craving for solid food, and the fact that, when the inordinate appetite is freely indulged, the patient still loses flesh and strength.

When Hawkesworth was first admitted, he was passing, as I have shown you, more than a pound and a half of solids daily in his urine; and nearly the whole of this must have been sugar. In him, therefore, nearly a pound and a half of his best food was daily

converted into this substance. Perhaps quite as much as this, for it has been ascertained that a considerable quantity of sugar is discharged from the bowels, and there can be no doubt that some portion escapes from other surfaces. Now all the food so converted is lost for nourishment, and we must make abstraction of it in estimating the quantity of aliment the patient takes. He is in the condition of a man whom necessity compels to live on food of the most innutritious kind, and who is obliged to make up for its defective quality by increase of quantity.

The great quantity of urine voided in diabetes—in other words, the great drain of liquids from the system—offers a still more obvious explanation of the thirst, the clammy mouth, and the dry skin.

All the symptoms I have mentioned—the craving for food, the loss of flesh, the thirst—are in evident relation with the density and amount of the urine; that is, with the loss of solids and liquids through this channel. Whenever by the influence of treatment, or otherwise, this loss is diminished, hunger and thirst diminish likewise, and the emaciation, if not entirely stayed, is rendered much less rapid.

The question now arises, what is it that determines the excessive secretion of urine? I believe it more than probable that the passage of sugar through the kidneys is its exciting cause. Almost all medicines which pass off largely by the kidney also cause free diuresis; and it is, as I believe, to the fact of their being eliminated through this organ that they owe their diuretic power. The same is true of the sugar in diabetes. It is no objection to this that sugar, as we usually take it, is not a diuretic, because in that case it is digested, and its qualities are completely altered, by the healthy stomach. It would be interesting to ascertain whether sugar injected into the blood would not increase the flow of urine.

It might, however, be supposed that the diuresis is owing to the large quantity of liquid the patient takes—that the disorder of digestion causes thirst—that the thirst leads him to drink largely—and that the diuresis merely results from the draining off of the superfluous water from the blood. If this were the order of causation, the thirst should be greatest soon after meals, and least in the morning before the night's fast is broken, and when the stomach has been for some hours empty. But, at present, Hawkesworth tells us, that he suffers most from thirst in the morning before breakfast, that he suffers little from it during the day, and not at all after his principal meals.

The thirst, then, is greatest, when he has been many hours without food, and after the kidneys have been a whole night draining liquids from the system. From this, and

from the dry state of the surface, and from the constipation so general in diabetes, coupled with the fact that we have a real, and very probably a powerful, cause of diuresis in the passage of so much sugar through the kidneys, we may infer almost with certainty, that the thirst is owing, as I have before stated, to the loss of liquids, and that the great consumption of these should be regarded as the consequence of the diuresis, not as its cause.

It has been remarked by several writers that the quantity of urine voided may very much exceed the whole amount of liquid taken by the patient; and an attempt has been made to explain this by supposing that fluid is then absorbed from the air by the lungs and skin. In cases in which the excess above the liquids allowed is great, and cannot be accounted for by the progressive emaciation, it is, I think, more probable that the medical man has been deceived by the patient; but if the fact should be established by future observations it would only confirm the inference, that the diuresis is the primary cause of the craving for liquids.

It, then, it be granted, that the diuresis is owing to the presence of sugar in the blood, or rather to its passage through the kidneys, it follows, that all the characteristic symptoms of diabetes may be traced to the production of sugar from the food, and its absorption into the blood. By this, a large proportion of the food is converted into a substance, which is not assimilated, and is, therefore, lost for nourishment; and an agent (sugar) is introduced into the blood, which is, probably, injurious by its presence there, and which, by its elimination through the kidney, causes diuresis, and consequently great drain from the body.

The formation of sugar in the process of digestion, and the absorption of this sugar into the blood, are, therefore, cardinal facts in the pathology of diabetes; and to explain these must be the prime object of all theories of the disease. Let us now see with what success this object has been fulfilled by writers on the subject.

According to Dr. Prout, who is justly regarded as high authority in these matters, diabetes may be said to originate in loss of the power to assimilate the saccharine principles we take as food.

Under the term "saccharine principles" are included sugar itself, and a large class of substances, which, from being easily convertible into sugar, and almost identical with it in chemical composition, may be regarded as its equivalents. These are mostly derived from the vegetable kingdom. The chief of them, considered as aliments, are woody fibre (the bran of corn, and fibres of other vegetables), gum, and starch; but the most important of these is starch.

In a state of health, all these forms of

vegetable matter, which constitute a large proportion of our daily food, are capable of being digested and assimilated; that is, of being converted into the constituents of blood, and thence into the several tissues of which our bodies are made up.

Now, according to Dr. Prout, they are all, in *healthy* digestion, first reduced to a *low* sugar; but this is only a transition state, and the sugar thus formed is at once converted into albuminous and oleaginous principles. Its existence in the stomach being, according to this theory, only intermediate and momentary, cannot readily be made a matter of experimental demonstration.

The first step, therefore, in the derangements in diabetes, consists, according to this writer, not in the formation of sugar in the stomach, which he considers a *healthy* process; but in the loss of that power which should convert the sugar so formed into the constituent principles of the blood, and through them into the living tissues of the body. He further believes, that, in advanced stages of the disease, sugar is not only formed in the stomach by the process of digestion, but that it is generated in other parts of the body from deranged assimilation, especially of the gelatinous tissues.

He considers the disease, then, to consist essentially in impairment or loss of this converting or organizing function of the assimilating organs.

But this is not the only theory that has been advanced to explain the phenomena of diabetes. It is found that in this disease the natural acid secretions of the skin are stopped; and that those of the mouth, as I have often pointed out to you in the case of Hawkesworth, are acid instead of being alkaline, as is usual in health.

Impressed with these facts, M. Bouchardat supposes that the disorder originates in suppressed perspiration; and that the acids which usually pass off by the skin escape by the mucous membrane and glands of the digestive apparatus; not that these acids have the power to convert starch into sugar at the temperature of the human body, but, he argues, wherever in organized beings they are found in considerable quantity, they are associated with diastase, or some analogous modification of albumen, which has this power. In illustration of this he brings forward the instance of unripe fruits, in which, as you know, these principles are associated to fulfil this object.

According to these views, diabetes originates in suppressed perspiration, and vicarious secretion of acid from the mucous membranes and glands of the digestive apparatus.

This theory is obviously too exclusively chemical. It seems to recognize nothing but chemical agency in the processes of the

living body. If it were true, we should expect that free sweating would at once arrest the disorder; but I need not tell you, after what you have seen in Hawkesworth, how far this is from being the case. Besides, the organic acids, to which M. Bouchardat ascribes all the phenomena of diabetes, are always in the healthy stomach, and sometimes in great excess, without giving rise to any symptoms like those of diabetes.

M. Bouchardat is, no doubt, right in the opinion, that the conversion of starch into sugar is effected by the chemical agency of secretions from the digestive organs. You have already seen that this change does take place in the stomach; and when you reflect that it is a purely chemical one, and very readily produced under a great variety of conditions, you will admit that the inference is unavoidable. At an appropriate temperature starch is converted into sugar both by acids and alkalis; and the same transformation takes place in several of the organic processes of plants, as in the ripening of fruits, and in the process of germination. The art of malting is, as you know, founded on this latter circumstance. And I beg you to remark that, although the functions of life are at this time active in the plant, yet this conversion of starch into sugar is a purely chemical matter, and quite independent of vital agencies. The proof of this is, that it goes on equally well when the materials of it are separated from the grain and mixed in their chemical form. The substance named diastase may be easily extracted from malt; and if it be then added in sufficient quantity to starch, all the starch is converted into sugar. Diastase is, as you know, one of the albuminous principles of plants, and, excepting this influence on starch, has no active chemical properties.

Since, then, the conversion of starch into sugar is such an easy matter, and especially since it is so readily effected in the tissues of organized beings, its accomplishment, by the chemical agency of the secretions of the stomach, is not difficult to conceive. But the mere conversion of starch into sugar does not explain diabetes; for a healthy stomach is capable of digesting large quantities of sugar. The blacks in the West Indies sometimes almost live upon sugar; but they do not get diabetes. What we have to explain is, not the conversion of starch into sugar, which there is reason to believe takes place in the healthy stomach\*, but the fact

that the sugar so formed is not digested and assimilated. To explain this we must admit some loss of power; and we are thus driven back on the theory of Prout. If, indeed, we should go a step further, and grant that the subsequent changes in the process of digestion, are, like the conversion of starch into sugar, effected by purely chemical agency of the secretions of the stomach, we have no reason to believe that a slight excess of the organic acids would prevent these changes; because, as I just now remarked, these acids are often in great excess in persons in whom digestion is not thus arrested, and who present no symptoms of diabetes. The alteration of the secretions of the stomach must be different from mere excess of lactic acid; and since this presumed alteration is *permanent*, we are forced, in order to explain it, to admit some organic change, or some modification of vital agency—as I just now expressed it, some loss of power.

I should not have thought it worth while to have alluded to this theory of M. Bouchardat, had it not been for the ingenuity which the author has displayed in his essays on this subject, and the idea that the theory may prove attractive to some from its apparent simplicity. At the present time, when organic chemistry is making great advances, there seems to be some danger that men of enthusiastic tempers will be led away, and fancy that chemistry is all-sufficient to explain the phenomena of life—that, as has been advanced by a distinguished French chemist, man, like a steam engine, is an apparatus that owes all its activity and all its power to the combustion of carbon. No one can be more sanguine than myself as to the results that may be expected from a study of organic chemistry. There can be no doubt that far more of the processes of the living body than has hitherto been supposed, are effected by mechanical or chemical agencies; but now, as much as ever, if we investigate those processes deeply, if we trace the phenomena backwards, we soon arrive at actions or changes, which neither chemistry nor mechanics can explain, and which force us to admit a vital agency distinct from either.

In almost all diseases, the two grand elements we are thus forced to recognize—chemical agency and living properties—largely enter: variously preponderating in their influence in different diseases. The part of the former precisely defined in some; in others, only obscurely recognized; but its importance not the less certain. Both most material to consider in our theory of disease, and both introducing their several indications into the treatment of the case.

\* Saliva, at the temperature of the body, converts starch into sugar. About half a pint of saliva was collected by Dr. Budd from a patient in King's College Hospital, affected with mercurial salivation. Some starch was then added to the saliva, and the mixture kept at blood-heat for an hour by means of a sand bath. A small quantity of yeast was then added; and on the temperature being maintained for an hour longer

rapid fermentation ensued; the mixture acquired the odour of new beer, and its surface became covered with a thick scum or froth.



It is from placing the importance of both these elements before us in a striking point of view, and distinctly defined in their separate influence and requirements, that diabetes is such an instructive lesson.

In the treatment of diabetes, according to the view I have taken of the pathology of the disease, we have two objects to aim at. The first and highest is, to strengthen the digestive and assimilating functions, in the impairment of which the disease seems essentially to consist; the second, to prevent, as far as possible, as long as the depraved digestion continues, the formation of sugar in the stomach, which, as I have already explained to you, seems to be the source of most of the other evils.

Unfortunately, we have as yet done little towards the attainment of the first object. Freedom from the harassing cares of business, and change of air, especially where the patient has resided in an unhealthy or malarious district, should be enjoined at the commencement of the disease, whenever the circumstances of the patient render such measures practicable. These ends would, perhaps, be best answered by a short sea-voyage, which I should also be disposed to recommend for other reasons, which I shall presently give you.

Beyond what can be effected by measures such as these, and by other obvious hygienic rules, we have little power to restore the digestive functions to their healthy condition.

In our endeavours to accomplish the second object—namely, to prevent the formation of sugar in the stomach—we are far more successful. We cannot, indeed, do this by medicines, but we can restrict the patient to food from which sugar cannot be readily formed. In this way, as I have already explained to you, we stay the emaciation and retard the progress of the disease; and although we exert no influence positively curative, we at least give time for the curative efforts of nature. As long, therefore, as the impairment of digestion continues, the patient should abstain from sugar, and as much as possible from all those principles, as starch and the vegetable gums and mucilages, which have nearly the same composition as sugar, and are readily converted into it. It was maintained by Dr. Rollo, who was one of the first to show the importance of diet in the treatment of diabetes, that the patient, for some time at least, should subsist entirely on animal food; and if we may judge from the cases published by him in support of his opinion, such a plan, if it could be carried out, offers a fairer chance of success than any other that has yet been tried. We might not, indeed, by this, prevent entirely the formation of sugar, because gelatine passes into sugar under

the influence of various chemical agents, though not nearly so readily as starch. But it has been found impossible by most men to restrain their diabetic patients to a diet exclusively animal. After a few days' restriction to such a diet, the craving for vegetable food of some kind becomes such, that no fears for the future will deter the patient from indulging in it.

In consequence of this, most physicians have relaxed the rigour of Rollo's treatment, and in addition to animal food, and oleaginous matters, which often agree well, have allowed the patient bread and other articles made of the flour of wheat; which is supposed by Dr. Prout to be more easily assimilated than most other farinaceous matters.

But even of the articles thus granted him, he is not allowed to take unsparingly. The craving appetite, so general in diabetes, would often lead him to overload the stomach, and increase the disorder of digestion. He is, therefore, cautioned not to take too much at a time.

He is also restricted in the quantity of liquids, which, if taken to excess, produce ill effects in various ways. They impair digestion, and they increase the quantity of urine. If the quantity of urine were increased by simple dilution, this would probably do no harm, but it is generally found that its density is increased at the same time; or if not increased in density, that there is at least an increase in the daily discharge of solid matter, which, as I have before remarked, is a measure of the exhausting power of the malady.

The fact, that drinking copiously increases the daily discharge of solids in the urine, has long been observed in diabetes; and a French physician, M. Becquerel, seems to have established by some recent observations that the same law holds in other states of the system.

The knowledge of this fact in diabetes has led men to restrict the quantity of liquids, and to recommend, instead of water, milk and animal decoctions, which, from their more cloying nature, are less likely to be taken to excess. It would seem, however, that milk is improper, from its containing a large proportion of a particular form of sugar.

Water, rendered alkaline by lime or magnesia, has also been much recommended. It often quenches thirst better than other diluents; perhaps from its neutralizing the acid, which appears to be in excess in the secretions of the mouth and stomach.

About the use of spirituous liquors opinion is much divided. In advanced stages of the disease, they are often very grateful to the patient from the temporary relief they give to the feelings of sinking and weakness

under which he labours. It is advisable that such as are taken should be perfectly dry, and contain no unfermented sugar.

Besides attention to diet, on which we must mainly rely, various other means have been found useful. The chief of these are, bleeding, opiates, and tonics.

At an early stage of diabetes, when, as often happens, the system is in a feverish state, general bleeding produces great relief, and manifestly retards the progress of the disorder. In more advanced stages, when we are deterred by the absence of fever, and by the weakness of the patient, from bleeding from the arm, cupping over the stomach, or an application of leeches, will frequently lessen the sense of heat or other uncomfortable feelings, so often referred to that part.

The effect of opiates in mitigating the symptoms of diabetes is still more striking. They are beneficial in every stage of the malady, and happily are not incompatible with any of the other means that have been found of service. They should, therefore, form part of every plan of treatment.

Tonics of various kinds—preparations of iron, quinine, carbonate of ammonia—have been much recommended, and are, no doubt, beneficial when the exhausting influence of the malady have been long continued. Their good effects are, however, far less obvious than those of opiates.

When Hawkesworth was brought into the hospital, he was placed under a plan of treatment such as I have described. He was strictly cautioned against taking sugar, or any fruits or vegetables, and was restricted to a diet of meat and bread; and for drink, milk, beef-tea, and a pint of porter a-day, was allowed him.

The absence of fever, and the weakness he complained of, deterred us from general bleeding, but soon after his admission to the hospital he was cupped over the stomach, with manifest relief to the uncomfortable feelings he experienced there.

He was ordered opium, which he has continued to take ever since; and in addition to this, the muriated tincture of iron. After some time, the muriated tincture was exchanged for the sulphate of iron, and this again for the sesquicarbonate; but neither preparation seemed to do more good than the opiate by itself. Sulphate of quinine was then tried, but produced no appreciable benefit. We next had recourse to creosote, which has been lately recommended in diabetes, and the trial of which was, I believe, first suggested by the property it has of preventing the transformation of starch into sugar under the influence of diastase. It produced no sensible benefit, and, at Hawkesworth's solicitation, was discontinued.

Under this plan of treatment, he at first improved considerably. The specific gravity

of the urine continued indeed the same (about 1040); but the quantity, which at the time of his admission averaged ten pints a-day, was reduced to four or five pints.

Towards the latter end of October the urine again increased in quantity, and during the whole of November it amounted to between seven and ten pints a day. The sp. gr. ranged from 1035 to 1045.

On the 5th of December, we discovered that he had been taking half a pound of sugar a week, which he had bought himself; and that he had availed himself of the permission we gave him to take a walk, to gratify his thirst by spruce-beer.

From this time he was confined to the hospital, and a stricter watch kept over him. The quantity of urine immediately diminished, and for the next fortnight, kept very steadily at six or seven pints a day.

On the 17th of December, acting on the opinion of M. Bouchardat, that an essential point in the treatment of diabetes is to restore the action of the skin, we put him on warm flannel dress, and gave him a hot air bath. This produced free sweating, and evidently benefited him. Since that time he has had the bath once or twice a week, and apparently with advantage. He is, at any rate, always desirous for its repetition, and tells us it invariably relieves the uneasy sensations in the stomach.

On the 27th of December, again acting on the advice of M. Bouchardat, we deprived him of ordinary bread which he had hitherto been taking, and gave him instead what M. Bouchardat calls gluten-bread—that is, bread made of flour that has been deprived of the chief part of its starch. The flour of wheat is composed of gluten and starch, in the proportion of one of the former to three or four of the latter; and the two principles may be readily separated by washing out the starch from dough.

It appears from some recent experiments of Magendie, that gluten extracted from wheat flour is of itself sufficient for the nourishment of dogs; and it seems probable, therefore, that a diet of animal food and gluten contains all that is requisite for the support of man—at least, for a considerable time. But bread made of pure gluten is so leathery—so glutinous—that it is impossible to masticate it. In order to make any thing that can be called bread, we are obliged to leave a certain proportion of starch with the gluten. The gluten-bread that we have given Hawkesworth is made by Mr. Bullock, a chemist in Conduit Street. In the first samples he sent there was one-sixth of the natural quantity of starch. In order to render it more dry and crisp the bread was made into rusks; but even in this state it was rather difficult to masticate, and Hawkesworth made great complaint of it.

Latterly, one-fifth of the natural proportion of starch, which is, I believe, the proportion recommended by Bouchardat, has been left with the gluten; and since this change was made Hawkesworth has been very contented with his bread. The bread is light, and when toasted is almost as agreeable to the taste as ordinary bread.

The substitution of the gluten-bread for ordinary bread was immediately followed by diminution in the quantity of urine, which was at once brought down to about four pints a day. The sp. gravity, however, continued as before, about 1040.

On the 4th of January we found a sudden increase in the quantity and in the density of the urine; and, after much close questioning, we discovered that he had been eating some rice-pudding, which contains sugar, and which the nurse, yielding to his entreaties, had given him.

This is the second time, since his admission to the hospital, that our endeavours to carry out this treatment have been frustrated by want of resolution on the part of the patient; and this you will find constantly happening in diabetes. In confirmed stages of the disease the patient becomes irresolute and childish, and has no strength of mind to resist the cravings of his appetite. This peculiar imbecility of mind is, probably, in some measure connected with the defective nutrition of the brain, which is so remarkable in advanced stages of diabetes. In the bodies of persons dead of this disease, the brain is always very remarkably shrunk; in consequence, no doubt, of the great wasting of all fatty matter. The void left, is, as usual, filled up with serum.

Since the 4th of January the quantity of urine has on one occasion been so little as two pints and a half in the 24 hours; but it has averaged about four pints. It has regained in some degree the natural urinous odour; but the sp. gr. has not at all diminished. It is now seldom less than 1040, and on some days 1045.

Since he commenced the gluten bread, the general symptoms of diabetes have much diminished: the appetite has become less, and the thirst is very slight, except in the morning before breakfast: his complexion is less sallow than it was, and his tongue cleaner: he says that he is much stronger, and he has certainly ceased to lose flesh.

It is evident, however, that the treatment is only palliative. The urine has still the high sp. gr. of diabetes; and the quantity he passes is as much charged with sugar as ever. All that we effect by the gluten-bread is to carry out more fully, and for a longer time than we have yet been able to do, the principle of depriving the patient of articles of food readily convertible into sugar; but we do not restore to the stomach the power

of healthy digestion. We relieve the thirst, retard the emaciation, and prevent, perhaps, for a time the occurrence of tuberculous disease of the lungs: we give longer time for the action of medicines, or for the *vis medicatrix naturæ*. This is certainly no slight advantage: it is, in fact, as much as we ever accomplish in strictly organic disease.

It seems probable, therefore, that bread made of flour deprived of a certain portion of its starch will in future form an essential part of the dietetic treatment of diabetes.

During the last week the case of Hawkesworth has presented a feature of great interest, which may perhaps render us less sanguine as to the good effects to be derived from gluten bread. I mean the occurrence of dropsy. About a week ago we noticed a slightly oedematous condition of the under eyelids, and found that he had some oedema of the feet and hands. This has increased, and at present the legs are swelled to twice their natural size. The dropsy has come on without any feverish symptoms, and at present he says that his health is as good as it has been at any time since his admission. The legs are free from pain or tenderness, and pit very readily on pressure.

The occasional occurrence of anasarca in the course of diabetes, and especially in its advanced stages, has been noticed by many writers, and has been supposed by Dr. Christison to depend on granular degeneration of the kidneys, which is met with not unfrequently in diabetic subjects. But in Hawkesworth we can detect no trace of albumen in the urine, in evidence that such a condition of the kidney exists.

Failing to discover the cause of the dropsy in granular degeneration of the kidney, we turned our attention to the heart, but have been equally unsuccessful there. The impulse of the heart is moderate, and the sounds are natural. The pulse is of moderate volume and regular; and he has at present no catarrh or distress of breathing, and there is no distension of the jugulars, to show that obstacle to the circulation through the heart exists.

We are driven then to the inference, that the dropsy depends on the condition of the blood; as it no doubt does when it occurs as a consequence of granular kidney.

It is rather singular that the last patient I had in the hospital affected with diabetes, had dropsy of the lower extremities and ascites; but this was accounted for by disease of the liver.

Of the causes of this singular malady, very little is known with certainty.

A few remarkable instances have been recorded of diabetes affecting several members of a family, and even for successive generations, which leave no doubt that a tendency to it is sometimes transmitted from

parent to child. But Hawkesworth seems to have inherited no disposition of this kind. His father was a sailor, who lived rather intemperately, but, when not suffering from the immediate effects of drink, was a healthy man. His mother is still living and hearty. He has three brothers, all living, free from eruptions, and, as far as he can judge, from any constitutional complaint. Hawkesworth himself, up to the age of 35, had uniform good health, with the exception of one attack of rheumatic fever, and was capable of great bodily exertion. There is no reason to suppose, therefore, as diabetes is not peculiar to advanced life, that he inherited any especial tendency to it. We must look for the cause of his malady in his mode of life, and in the circumstances in which he has been placed.

Dr. Prout reckons mental anxiety, venereal excesses, and the abuse of mercury, among the exciting causes of diabetes; but we have not been able to trace the operation of either of these causes in Hawkesworth. He never had syphilis or took mercury.

Residence in a damp malarious situation has also been ranked among the causes capable of exciting diabetes. Hawkesworth has spent all his life at Greenwich, which certainly is not quite free from the charge of being damp and malarious; but he never had ague, nor enlarged spleen, nor, before the accession of this complaint, the peculiar pallid and sallow complexion, and the muscular debility, which the prolonged influence of malaria produces.

Frequent attacks of rheumatism and gout have seemed in many cases the exciting cause of diabetes; but, in Hawkesworth, the diabetes can hardly be charged to the influence of either of those maladies. He never, in fact, had any gouty affection; and the only attack of rheumatism he ever suffered appears to have done him no permanent injury. He has never had the slightest recurrence of it; and he assures us, that, for ten years after this attack, he was as strong, and his health every way as good, as before it.

A prominent place among the exciting causes of diabetes has also been assigned to prolonged errors of diet, and especially to the prolonged use of diet too exclusively vegetable. To the influence of this cause Hawkesworth has been exposed. He tells us that during a great portion of his life he has been in the habit of eating large quantities of vegetables, and but little animal food. A patient that we had last year in the hospital affected with diabetes, had also been in the habit of living almost exclusively on vegetables.

The manifest effect of a vegetable diet in aggravating the disorder, when once formed, probably led to its being considered a cause

of it. The inference is not strictly logical, but I am inclined to believe that the prolonged use of a diet too exclusively vegetable may have a real influence in bringing on diabetes; not from the experience of those two cases only, but also from the exemption from diabetes that seems to be enjoyed by sailors. During the time I was physician to the Dreadnought (between three and four years) not a single case of diabetes was brought to the hospital; and it appears from the registers, which are kept with the most praiseworthy care, that, from the first establishment of the hospital, among 41,000 patients who have been treated there, there has been only one affected with diabetes.

The diet of sailors is, as you are aware, composed almost entirely of salt meat and biscuit; but it is difficult to estimate the separate influence of this, with reference to the disease in question, from there being so many other circumstances in which the life of a sailor differs from that of a landsman. Among the advantages enjoyed by the sailor, and which may have some share in procuring his exemption from diabetes, are, the pure air he breathes at sea, and the freedom from care so characteristic of the English seaman.

The concurrent operation of these powerful influences renders it impossible to separate and estimate at its just value the influence that their peculiar diet may have in exempting sailors from diabetes; but the fact of their exemption adds strength to the opinion formed on other grounds, that a diet too exclusively vegetable has a tendency to bring on diabetes.

Another possible cause occurs to us in considering the case of Hawkesworth, namely, the influence of lead. He is a painter and glazier, and two years ago he suffered severely from colic, cramps in the legs, and other effects of lead. I have often had occasion to call your attention to the great length of time lead may remain in the system, and to its powerful effect in impairing nutrition. It seems possible, therefore, that it may have some tendency to cause that weakness or paralysis of the assimilating function, in which, according to Dr. Prout, diabetes consists.

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#### ILLUSTRATIONS OF THE PATHOLOGY, DIAGNOSIS, & TREAT- MENT OF OPHTHALMIC AF- FECTIONS.

By EDW. HOCKEN, M.D. M.R.C.S.L. &c.  
[Continued from p. 33].

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WISHING to illustrate completely the subject of the varieties, causes, inci-



patient and confirmed symptoms, and the effects of treatment, in the amauroses depending on hyperæmia of the general visual nervous system, I will narrate the few remaining but condensed cases which I possess. At that period of life when the catamenia ought to occur, or at a time shortly afterwards, if they fail to be secreted, or having appeared are again suppressed by causes which derange the general health, different constitutional diseases may be established, leading to different results; either the general powers may sink, the vascular system become comparatively empty, and impoverished in its contents, with those other derangements in the economy constituting chlorosis; or, on the contrary, the vascular system may become absolutely or relatively full\*—the one with an exuberance of power, the other with a comparative deficiency in this particular. Amaurosis may occur, and does occur comparatively often, in either of these two last constitutional conditions. The relative plethora is, however, by far the more common. The following case appears to me well to illustrate the last form.

*Complete amaurosis of the right eye; imperfection of vision in the left; dull, oppressive headache; non-appearance of the menses.*

Mary Hallett, 16 years of age, was admitted into the West of England Eye Infirmary on the 21st of May, 1841. She states that for a series of years she always enjoyed uninterrupted good health, and that her habitual employments were simply confined to domestic affairs. Her sight had been failing for the last six months, especially in the right eye; in which organ she had been completely blind for the three preceding months before her admission, whilst the left has been gradually getting worse since that period. During the whole time of the existence of these symptoms, she has been subject to very severe, deep-seated, but dull and oppressive headache, especially affecting the right side. She states, moreover, that when about six years old she became blind in both eyes, and continued in this condition for about twelve months, at the expiration of which period she was perfectly cured by blood-

letting, which was employed locally, and that she has remained perfectly well ever since, until the commencement of her present attack.

*Symptoms.*—As regards her present symptoms, her countenance appears flushed, bloated, and full-looking; conjunctivæ rather more vascular than natural; both pupils widely dilated, and very sluggish in their movements, being but little sensible of the influence of light: the globes generally, and their component textures, appear healthy.

She complains of complete loss of vision in the right eye, being quite unable to distinguish light from darkness, or day from night, with that organ, and of great imperfection of sight, with cloudy, misty, and deranged appearance of objects viewed with the left eye. At present her headache is very severe; she describes it as deep-seated, oppressive, but very severe, and as affecting the right side especially. She never has been affected with intolerance of light.

Her tongue appears natural; her pulse is quick and weak, but full; her bowels regular: but she had never menstruated.

*Treatment.*—Her hair was ordered to be cut, and kept cut close, and her head to be bathed with cold water; to take the compound aloetic pill night and morning (Aloes c. Myrrhâ). She continued this treatment carefully for three weeks without any benefit.

May 11th.—Was ordered to continue the pills and bathings, with the addition of five grains of the Pil. Hydrarg. Chlorid. Comp. every night.

July 2d.—Had continued the Plummer's pill for a long time (since last date) without any beneficial result, and is now directed to take the aloetic pill alone.

5th.—Her vision remains without improvement; general powers declining. Taking these facts into consideration, with her own desire to depart, it was thought the best plan to allow her to return to the country.

*REMARKS.*—But few remarks need to be appended to the present case. It illustrates well the observations with which I commenced this paper, both as regards constitutional and local symptoms. A condition of cerebral circulation producing amaurosis had once before existed, and received its cure in the abstraction of blood; but it would

\* The remarks on the concluding case in this paper more fully explain these propositions.



appear to have been more active in its characters than the present attack. Can such local hyperæmias as the present merge insensibly into inflammation producing organic changes? and did the severe localization of the pain on the right side indicate that such had already commenced and progressed in the instance before us? That such may be the result occasionally I have not the slightest doubt, although it does not often follow on simple hyperæmias; and as regards the present case, the fixed and continued character of the pain affecting the right side, the insufficiency of treatment, and the complete loss of vision in the right eye, would lead me, at all events, to expect something of this kind. Again, however, I would refer to treatment, and again assert the great powers of counter-irritation perseveringly and judiciously employed, and which I consider a great omission in the foregoing case. I prefer blisters behind the ears, applied and then allowed to heal, and then reapplied, timely general or local blood-letting, according to circumstances, and a more full and continued action of mercury than was practised in the present instance; although it does not require a full, sudden, and powerful salivation, but a mild, persevering, constitutional use of the remedy.

*Imperfection of vision in both eyes; pain over the brows, with some intolerance of light.*

Christopher Lake was admitted as a patient of the West of England Eye Infirmary, June 22d, 1841, complaining of great imperfection of vision in both eyes. He stated himself to be 24 years of age, and to be residing at Dawlish. He has always been a stout healthy man, and stated his usual employments to be connected with shoe-making.

The account he gave of the affection is the following:—That early in the morning he can see very well, but becomes unable to keep his eyes open towards the middle of the day; that he is compelled, as he terms it, “to sleep away at his work.” At all periods he is quite unable to work by a strong light, the effects of which occasion him considerable pain in the organ; but he can work best by a dim candle-light. He complains of dull heavy pain over the brows, much increased

by exertion or straining of his sight at work, and increased in connection with pain in the eyeballs themselves by exposure to a strong light. His appearance was dull, congested, and inexpressive, with a peculiar heavy sleepy look about his eyes. Both pupils are much dilated and quite motionless; tongue clean; bowels usually regular, and digestion undisturbed; pulse full and compressible. His vision was found to be very indistinct.

*Treatment.*—June 22d. He was directed to apply the Ung. Antim. Potass. Tart. to the back of the neck with regularity, until it produced a pretty abundant eruption, and then to use it occasionally, so as to keep this up; to take five grains of the Pil. Hyd. every other night, and five grains of the Comp. Colocynth pill, with one-twelfth of a grain of the Ant. Potass. Tart. every night.

July 2d. — Rather improved in vision, &c. To continue as before.

He continued to improve on the 9th, having lost the dull pain over the brows. To go on with the same treatment.

Sept. 3d.—Vision still less defective than at previous date; but he now complains of severe pain in the head, especially over the brows: his appearance was dull, and his countenance flushed. To lose blood from the arm ad  $\text{xxij}$ .; to continue other remedies with regularity.

He had not reapplied in Oct. 1841.

REMARKS.—We may, I think, fairly presume that this was an example of amaurosis dependent on passive hyperæmia of the visual nervous apparatus generally—the cause of its production not being apparent. I come to this conclusion from the dull congested aspect of the countenance; the heavy, sleepy appearance of the eyes, and the sense of weight and oppression over the brows, as well as the indolent condition of the mental faculties, and tendency to sleep. Intolerance of light formed a prominent symptom in this case, and such I have found to be occasionally present in other forms; whilst the retina retained some powers of sensation, passing off with the increase of the amaurosis; but I am unable to account exactly for the circumstances which determine either its presence or absence. As regards the cause (exciting) which occasioned the hyperæmia, the position and occupa-

tions of the patient during his waking hours may have greatly assisted, if it did not produce, the proximate cause of the complaint, aided by a tolerably free use of exciting drinks and irregular habits, which such individuals rarely consider unusual or faulty. By the operation of remedial measures his vision was much improved, and his headache cured; but we found that on the 3d of September he presented himself with the general and local symptoms of pretty active determination of blood to the head, for which general blood-letting was employed. I presume that he was cured by these measures, or so much bettered as to think it not worth his while to present himself again.

*CASE.—Gradually increasing amaurosis of both eyes, following a sudden and severe attack of headache; slight ulcer of cornea on one eye; non-appearance of the menses.*

Elizabeth Belson, 15 years of age, was admitted as a patient of the West of England Eye Infirmary on the 26th of August, 1841. She is a tall and very stout girl of her age, of a full and florid appearance.

She states that about two years since she was seized with a sudden and very severe attack of headache, which lasted six weeks, and continued, during the greater part of that period, so severe, that her mother expressively describes her condition "as being unable to lift her head from the pillow." During this illness she was attended by a surgeon, who bled her locally, under which treatment the severity of the pain passed off; but her sight failed gradually from that date, and has continued to get worse and worse, so that at present she possesses scarcely any useful vision.

At present she complains of great defect in her visual powers, so that she is unable to walk about alone; her sight being misty and obstructed. There is present a slight ulcer on one cornea; her head appears of an unusually large size, and she is of a full plethoric habit. Her appearance is dull and heavy, especially about the eyes; her countenance bloated, and at the time of taking these notes somewhat pallid. Both pupils are dilated, and both irides act very imperfectly and sluggishly by the alternation of light and shade. She has a full pulse;

her bowels regular. She has never menstruated. She complains also of occasional pain, which affects the whole head.

Since the commencement of the existing symptoms she had been treated antiphlogistically without benefit.

She was now (August 25th, 1841) placed under the following treatment:—A weak solution of the nitrate of silver was directed to be employed as an application for the ulcer of the cornea, five grains of the Pil. Hydrarg. Chlorid. Comp. to be taken every night, and to apply the Unguent. Antim. Potass. Tart. to the back of the neck.

Sept. 3d.—Vision has decidedly improved since the last date. To continue the same treatment, with the addition of ten grains of the Pil. Aloes c. Myrrhâ every night. Had not re-applied in the middle of October.

REMARKS.—I have already made some general observations on these cases, dividing them into active and passive, and briefly illustrated my propositions by describing and commenting on a case of the passive variety. The present is obviously an illustration of the kind, and might have been narrated, after the first case in this paper, as such. I am, however, not perfectly satisfied that this condition was not preceded and primarily occasioned by actual inflammation of the membranes or brain; such a condition remaining in a subdued form, complicated with the general hyperæmia of the head, and concerned in the causation of the loss of vision, although there is no clear evidence of the fact, and mild antiphlogistic measures speedily relieved its severity. The general symptoms clearly indicated a condition of active plethora; and although "a tall and stout girl of her age," she had never menstruated; in fact, she had arrived at that period of life, in the female constitution, when it is necessary for the individual's health that this flux should exist. In the present instance, the quantity and quality of the circulating blood became excessive; a natural tendency to this condition probably existing, and in the advanced stage of this constitutional condition the local became developed. The progress I have narrated, and the effects of gentle treatment, continued for a short time, were encouraging. I have no doubt that the induction of the normal

flow of the catamenia would have been of great service.

Supposing a secretion of pus from extensive ulcers, or a loss of blood from hæmorrhoids, which, from continuance, have become habitual, to exist in any individual, it will be obvious that, unless a supply of blood were constantly furnished, not only sufficient for the ordinary demands of the animal economy in its normal condition, but beyond this, sufficient both for the wants of the system and the unnatural tax on its powers (existing in the flux), the vital powers must diminish in proportion to the excess of waste over the constitutional powers to meet the demand: so also will it be obvious that if such discharge were stopped at a time when the system had become habituated to its presence, without diminution of power by their continuance, the quantity of blood formed would still be above the normal average, and consequently accumulate in the vessels, and stimulate the inherent powers of protection to originate some actions and processes designed for its relief, whether they do, or do not, prove desirable to the health and integrity of the individual whose system is the theatre of its operations. Taking these obvious examples as illustrations, we may the more readily understand how either the suppression or non-appearance of the menses occasions a derangement in the general vascular system, since the normal constitutional powers prepare sufficient material both for the processes of life, and the habitual occurrence of the periodical discharge, so far from occasioning by the process any depression of the general tone, that it appears conducive to health; and hence, if the constitutional effort be made at puberty, but this is overcome by general or local causes, disease is sure to follow, be it general plethora of an active type, leading to its own terminations, or plethora of a passive form, with such other lesions of the nervous and circulating systems as speedily interfere with the functions of important organs, derange the secretions and excretions, and hence finally impoverish as well as poison the general mass of blood, weaken the nervous system, and disorder the whole economy: the effects being the same in nature even when the catamenia are once fully established, and then suppressed, either the results follow I have mentioned, or

a vicarious discharge is established with the object of counteracting the injurious consequences on the system of menstrual suppression.

Taking these facts into consideration we can the more readily comprehend the constitutional origin, appreciate the varieties, and the apparent uncertainty, of the derangements of vision which may occur in retention or suppression of the catamenia, as well as allow the proximity and relation which chlorosis bears to passive plethora, and "excrementitious redundancy" produced by the same predisposing and exciting causes.

[To be continued.]

### OBSERVATIONS ON THE STATISTICS OF PHTHISIS,

AND ON THE INFLUENCE OF CLIMATE AND  
OCCUPATION IN THE PRODUCTION AND  
DEVELOPMENT OF THAT DISEASE.\*

(For the *London Medical Gazette*.)

THERE is perhaps no disease which at the present time so much attracts the attention of the medical philosopher, or is so worthy the investigation it has hitherto received, and which it is yet undergoing, as phthisis. Independently of the interest created by the age and sex of those who are most commonly its victims, this disease claims especial notice from the vast extent of its ravages, not only in Great Britain, but throughout the greater part of Europe; and also from the probability there is, that, at least in this country, the mortality from phthisis is now, and has been for some years past, annually increasing.

In the present series of papers we do not intend to discuss the diagnosis or treatment of phthisis, but simply to analyse, so far, and as briefly as we can, the principal authentic statistical facts which we have at our command relating to the prevalence and fatality of phthisis in various parts of the world, and more especially in Great Britain; and thence endeavour to deduce some general conclusions with respect to the influence exerted by climate in checking or favouring the development of this disease.

\* Communicated by the author.

Notwithstanding the vast labour which has been expended on the investigation of phthisis, and the great talent which has been devoted to the task, it must be confessed that, although the diagnosis is greatly improved, and, indeed, may be said to be almost perfect, and thus the first step to a more accurate knowledge of the pathological nature of the disease made, yet no method of cure, nor even any means of prevention, have been discovered; and although nature has undoubtedly, in some few cases, of itself effected a cure, this disease has never hitherto yielded to human remedies, and still remains the true, "opprobrium medicorum."

In this state of the question it may certainly be worth while to examine those circumstances by which it would seem the frequency of phthisis is affected; and though I do not venture to hope that in the present series of papers I can contribute much towards the settlement of this confessedly difficult subject, I hope this essay may be the means of directing to this subject the attention of some members of the medical profession more competent to the task than myself; certain as I am that this method of investigating disease, and more especially phthisis, may lead to results of no inconsiderable value and importance.

The principal and most accurate source of information, as to the statistics of disease in this country, is of course to be found in the reports of the

Registrar-General, and in the important and interesting investigations of Mr. Farr, the results of which are contained in the appendices to the reports. But valuable as are these reports, they do not furnish so much information, as to the effect of climate on phthisis, as could be wished; and this is owing partly to the large area of each of the divisions or districts into which the country is divided, and in each of which almost every variety of climate experienced in England is thus to be found, and partly from the short period during which the system of registration has been in operation, and which is far too short to render it safe to rely confidently on conclusions drawn from the facts exhibited in the reports. Many years must elapse, and our knowledge of the influence of occupation on phthisis must be greatly extended, before deductions from these reports can be said to have any degree of certainty.

In the annexed table are given the total number of deaths registered in different years, exclusive of violent deaths, and those the causes of which were not specified, and the number of deaths caused by phthisis in the same years, distinguishing the sexes. The year 1837 includes only the last six months of that year; and in the Registrar-General's report for that year, the deaths are recorded under the two separate heads of consumption and decline—a distinction which is not made in the subsequent reports, and which, therefore, I have not retained.

Year.	Total number of deaths.			Deaths by phthisis.		
	Males.	Females.	Total.	Males.	Females	Total.
1837	67,949	68,726	136,675	12,968	14,786	27,754
1838	159,969	158,535	318,504	27,935	31,090	59,025
1839	159,733	158,784	318,517	28,106	31,453	59,559

From the above table I have calculated the proportion which the number of deaths caused by phthisis bears to the total number of deaths of males and females, and below are given the results, or the number of deaths caused by phthisis in each 100 deaths happening in England and Wales in both sexes, and also the proportion the aggregate number of deaths by this disease bears to the total number of deaths including both sexes.

Year.	Males.	Females	Both Sexes.
1837	19·08	21·5	20·22
1838	17·4	20·9	19·15
1839	17·5	19·2	18·65
Mean	17·99	20·73	19·36

Great as the mortality from this disease thus appears to be, it is to be feared that the above estimate is below



the truth. There can be little doubt that many deaths recorded under other heads ought to be registered under that of phthisis, in particular many of the deaths from dropsy; and Mr. Farr, in the appendix to the second report (p. 1838), remarks that "a great number of the deaths referred (1218) to hæmorrhage, and registered *rupture of a blood-vessel*, belong to consumption."

Taking the mean of the years, the number of deaths in which are given above, it appears that 19·36 per cent. of the total number of deaths, or nearly one in five, is caused by phthisis. If to this we add the number of persons whose lungs are found on examination after death to be tuberculous, and which is stated by some authorities, and, if I remember right, by Louis, to be in the proportion of one-sixth\* of all those who die of other diseases, we find that nearly one-third of the total number of deaths (subject to the exception with which I set out) are those of persons who either die of, or are labouring under, phthisis at the time of their death.

The comparative tendency to phthisis in the two sexes has been calculated by Mr. Farr by taking the ratio which the number of deaths from phthisis in 100 deaths of males, and in the same number of deaths of females, bear to each other. Estimated in this manner, the mean per centage of deaths by phthisis of males and females being 17·99 and 20·7 in the two years and a half, would give the number 1·14, as expressing the tendency to consumption in the female: the tendency in the male being taken as unity. The above, however, is not a very exact method of exhibiting the comparative tendency to phthisis in the two sexes. A more accurate estimate is, in my opinion, obtained by comparing the actual mortality from phthisis in the two sexes,

\* According to Dr. C. J. B. Williams, in a recent number of the *MED. GAZETTE*, the proportion is much larger. He observes: "I am convinced, from extensive observation and much reflection on this subject, that tuberculous disease of the lungs, in some degree or another, in one form or another, prevails among the more seriously sick in London, and in other large towns, in as great a proportion as among our own patients (1 in 3·5). So far as our own post-mortem examinations have given the opportunity, you have seen verified the statement which I have made, that of those in large towns who die of various diseases or accidents, above the age of thirty, more than half exhibit in the lungs more or less of tubercular disease, or of the traces which it leaves behind."

with the number of persons of each sex living at the time. Estimated in this manner, the results are rather different from those of Mr. Farr, and lead to the conclusion that the difference in the mortality from phthisis in the two sexes is not so great as stated by him, and as is generally supposed.

The population of England and Wales in 1831 and 1841 respectively is given below, and indicates an annual rate of increase in the whole population of 14·525 per cent. in the ten years, or, assuming the population in 1831 as unity, an annual rate of increase of ·014525: taking, in the same manner, the male population in 1831 as the unit, the table shows a rate of increase = ·01483 of the males; while, in the same way, the annual rate of increase of the female population, in the ten years ending 1841, was ·01422. These rates of increase are much below those which took place in the ten years ending 1841. We have supposed the rate of increase uniform, or an equal number added to the population in each year. There can be no doubt that this supposition is incorrect, and that the rate of increase has been gradually diminishing; yet, nevertheless, a tolerably exact estimate of the population is thus obtained, and a result sufficiently near the truth is, for our purpose, perhaps, obtained.

The population returns in 1831 and 1841 give the entire population as follows:—

	Males.	Females.	Total.
1831	6,769,469	7,125,105	13,894,574
1841	7,773,411	8,138,314	15,911,725

Calculating the population in the intermediate years in the manner just explained, we shall find the population, at the periods to which the Registrar-General's reports extend, to be as under:—

	Total.	Males.	Females.
1837	15,105,482	7,372,470	7,720,105
1839	15,307,300	7,472,970	7,821,423
1838	15,509,118	7,573,470	7,922,741

Taking the above numbers to represent the actual population at the respective periods, the annual mortality



from phthisis in each 100 males living in England and Wales,

was in 1837 .....	351796
1838 .....	373814
1839 .....	377440
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Mean =	367683

The mortality from phthisis in the female sex is higher, and in the same years this disease caused a mortality in each 100 females living,

of .....	383052	in 1837
.....	397498	1838
.....	396996	1839
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Mean =	392515	

The comparative mortality from phthisis in the two sexes thus appears to be, taking the mortality in the male sex as unity, in the ratio 1·0675 to 1; or, in other words, consumption is in this country rather under seven per cent. more fatal to females than to males.

Viewed in this manner, the difference in the fatality of phthisis to the two sexes is, as we have before remarked, much below what has been generally supposed. Either of the above methods of estimating the comparative fatality of any disease in the two sexes may, of course, find advocates for their correctness; but I am disposed to believe that the last mode of calculating the amount is the one which gives the result nearest the truth. If we calculate the comparative tendency to phthisis by taking the proportion the deaths by phthisis form of the total number of deaths in each sex, which is the mode adopted by Mr. Farr, a result is obtained differing very considerably above, the tendency in the female being thus 14 per cent. greater than the male.

We have before remarked that from the great extent of each of the districts referred to in the Registrar-General's reports, so much information as to the effect of climate on phthisis cannot be gathered as would be obtained were the districts of a smaller size. In different parts of the same county in England we may generally meet with almost as great a difference in climate, both with respect to temperature and dryness, as is to be found in wholly different and distant parts of England, and thus the effect of climate is not so distinctly shown in the reports as it would be, were it possible to compare

the mortality in numerous small tracts of country enjoying the same or a different climate.

That certain small spots or districts of country are remarkable either for the frequency of phthisis among the inhabitants, or their freedom from that disease, is a fact which we ourselves have noted. Mr. Thackrah, in his very interesting work\*, has thus remarked the great frequency of this disease in the neighbourhood of Bradford. But, with respect to this particular locality, Mr. Thackrah makes an additional and very curious observation, which I think it is worth while to stop to notice. In speaking of the well-known forges in the neighbourhood of that town, and the health of the workmen employed at them, he remarks that, "Notwithstanding the great transition to which founders are exposed, we did not find that they are particularly subject to acute diseases. We were informed that they are rarely off work, except from intemperance. Consumption is said to be exceedingly rare in the neighbourhood of the iron-works." The statement made in the last part of this extract appears to be confirmed by another observer; for the writer, in a note, adds, "Dr. Macturck, of Bradford, who, from his vicinity to the iron works, is well acquainted with the subject, has been kind enough to review these observations. He states them to be correct. He thinks that consumption, though the peculiar scourge of Bradford and its neighbourhood, is comparatively rare among iron-founders."

This circumstance, if a fact, which it thus appears to be, is certainly worthy of notice, and is the more curious if, as we believe, iron-founders are not, in general, more free from pulmonary complaints than other classes of operatives. Ramazzini has discussed the subject of the health of smiths, but as the persons to whom his observations apply were merely common smiths, and not persons employed in bloomeries, his remarks do not bear very immediately on the subject. "Innerliche krankheiten der Brust," says Ramazzini†, werden bei Eisen-schmidten nicht allzu häufig angehoffen."

\* The Effects of the principal Arts, Trades, and Professions, on Health and Longevity, &c., p. 77.

† Abhandlung von der Krankheiten der Kunst-

The mean duration of life among smiths would, however, appear to be shorter than the average of other classes of persons. The researches of M. Lombard\*, who has discussed with remarkable sagacity the deaths happening at Geneva, assign a period of 56·3 years as the mean duration of life at that place, whilst he gives 54·5 years as the mean duration of the life of smiths.

The iron forged at the works near Bradford is the celebrated Bowling or Low Moor Iron, so well known to, and highly prized by, every engineer for its tenacity and toughness; and it should be remarked that these qualities, on account of which it excels every other kind of British iron, are owing to the considerable proportion of arsenic which it contains; a metal absent in most sorts of iron. On the chemical constitutions of this iron Dr. Schafhaeutl remarks†, "that the best irons of Sweden contain a considerable quantity of arsenic, and the celebrated English *Low Moor* iron contains still more. By forging the best English cast steel, arsenic is volatilized, and may be easily detected by the smell; and the blacksmiths who forge *Low Moor* iron frequently complain of the unpleasant smell which escapes, by them termed a sulphureous smell, causing them often swelled lips."

We must not, however, (more particularly as Mr. Thackrah has furnished no numerical data) from this single fact, conclude that this metal exerts a protective power against phthisis, and the above observations must not, therefore, be understood to be urged as any proof that this metal has power, when absorbed into the human system, of warding off the incursions of this perhaps the most formidable and fatal disease to which the human species is exposed. I consider the peculiar freedom of the workmen at the Low Moor works from phthisis, while they are exposed in a remarkable degree to the influence of arsenic, only as a fact singular in itself, and which deserves to be contrasted with the supposed effects of arsenic in other places and under different circumstances; and I hope that the present notice of this fact may lead some of the readers of this jour-

nal who, by residing in the neighbourhood of copper smelting works in Wales, or near iron bloomeries, have the opportunity of investigating this subject, to turn their attention to the point.

The miners in some parts of Germany, particularly those employed in the preparation of smalt, and the copper smelters in Wales, are much more exposed to the fumes of arsenic; but I have not been able to learn, as far as concerns the latter class, whether, as amongst the iron-founders at Bradford, any peculiar exemption from phthisis obtains. Ramazzini, however, distinctly asserts, that the fumes of arsenic are not only highly injurious to the workmen employed in the cobalt mines of Germany, but also that the absorption of this metal frequently induces consumption. He observes that care is taken to prevent the fumes escaping, the arsenic being condensed or sublimed in the process of roasting in long wooden pipes\*: "wobei aber niemals verhindert kann, dass nicht ein Theil der Rattenpulverdämpfe in die Lungen der Arbeiter, besonders derer, die das Feuer behandeln, gelangen sollte, welche auch nach Henkel's Zeugniß fast insgesamt von Engbrüstigkeit, Keichen und Husten befallen werden, welche Zufälle oft zehn bis zwanzig Jahr lang, bis an ihrem Tod dauern, das Leben allemahl, aber unstreitig, wegen der Arbeit im Freyen, nicht so mächtig als die Grubensarbeit verkürzen, und endlich insgemein, nach einem mühseligem Lebee, die Lungen sucht, ein auszehrender Fieber und der Tod verursachen." At the time when the preceding extract was written the diagnosis of phthisis was very imperfect; and we surely think, from the above account, that the characters of the disease are those of true tubercular phthisis.

In conclusion, I fully coincide in, and feel the force of, the observation on the discovery and selection of remedies for this disease, inserted in the English translation of Louis on Phthisis. "The difficulty of the inquiry is immense, and much caution must be shown in arriving at general conclusions: on the other hand, the hopelessness of the disease, and the insufficiency of every known treatment,

ler und Handwerker vermehrt von J. C. G. Ackermann, Stendal. 1780, p. 263.

\* Annales d'Hygiène publique, vol. xiv.

† Lond. and Edin. Phil. Mag. vol. xvi. p. 570.

\* Abhandlung, p. 263.

fully justify experiments in search of a new remedy." Undoubtedly, when we consider the fearful mortality from phthisis, and the age at which it most commonly attacks its victims, experiments appear to be justifiable; and a successful mode of treating this disease to be the great and most important advance yet remaining to be made in the art of medicine. "*Et profecto, si hominibus unquam liceret gloriari, certe de hoc maxime gloriandum esset, tantum scilicet profecisse genus suum, et tam præclarum tamque perenne existere ingenii humani monumentum.*"

[To be continued.]

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ON THE  
VITAL PROCESSES AND THE IN-  
FLUENCE OF THE ATMOSPHERE  
UPON ANIMALS.

BY PROFESSOR LIEBIG.

Translated from the "*Annalen der Chimie und Pharmacie.*"

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THERE is in animals and plants a power which may be supposed at rest, but which, when active, is the cause of the increase in mass and of the repair of the substance which is used. By means of external circumstances the static power of this activity is increased. This power when in action is evidenced in the formation of a series of products which, though they are sometimes inclosed in straight lines, yet are they far removed from those geometric forms which we see in crystallised minerals. This power is called vital power. The increase in mass of plants depends on a decomposition which proceeds in certain parts of them under the influences of light and heat. In the vital processes in plants, inorganic substances without exception are submitted to this decomposition; and if we may reckon, as the most distinguished mineralogists do, the air and certain other gases as minerals, we may say that the vital activity in plants effects the transformation of the mineral into a body endowed with life. The mineral takes part in the support of the vital power. The increase in mass in a living plant presupposes that certain components of the food become components of the substance of the plant; and a comparison of the chemical com-

position of both shews with certainty which of the components of the food pass away, and which are assimilated. The observations of vegetable physiologists and the investigations of chemists have mutually proved that the increase and development of plants depends on a separation of oxygen from the constituents of their food. In exact opposition to vegetable life, animal life shews itself in a never-ceasing absorption and combination of the oxygen of the air with certain components of the animal body. While no part of an organic body, unless it first take an inorganic form in consequence of putrefaction or decay, can serve for the nourishment of a plant; an animal requires for its support and growth more highly organised atoms. The food of all animals is, under all circumstances, organised.

An animal is distinguished from a vegetable by its power of motion, and generally by sensation. These modes of action proceed from certain organs which are wanting in plants. Comparative anatomy shows that motion and sensation depend on certain apparatuses, which are only related by being united in a common centre; and the substance of the spinal cord, the nerves, and brain, are, in their composition and chemical relations, remarkably different from the substance of the cellular membranes, tendons, muscles, and skin. All that can be called motion in the animal body proceeds from the nervous system. The motions in plants, as the circulation of the sap in some *Charæ*, the closing of flowers and leaves, depends on physical and mechanical causes. A plant contains no nerves; in it warmth and light are the remote causes of motion; while in animals we see in the nervous system a source of power which is able during life at each moment to renew itself. Both in the assimilation of food by plants, and in their whole process of formation, there is a dependence on certain external influences which produce motion; whilst the growth of the animal body is, up to a certain point, independent of these external causes, because the body produces within itself, by a special system of apparatus, that power of motion which is indispensable for life.

The processes of formation, assimilation, and the transition of those sub-

stances which are in a state of motion into a state of rest, proceeds in the same way in plants and in animals. It is the same cause, namely the peculiar vegetative life, which acts without consciousness, that determines in both the increase in mass. The vegetative life makes itself known in plants by the help of external influences, but in animals by means of influences produced within themselves. The circulation of the blood, secretion, and digestion, are each subject to the nervous system. But it is one and the same power which gives equally wonderful properties to the germ, to the leaves, and to the fibres of the roots, as to the secreting skin and the glands, or to each organ, rendering it capable of directing its own function; only the causes which set them in motion are in the two cases different. Whilst we always find in the lowest classes of animals organs of motion, we find, in the highest, organs of feeling and sensation, of consciousness and reason. The pathologist shows us that the proper vegetative life is by no means confined to the existence of these organs; that the process of nutrition proceeds in the same way in those parts of the body where the nerves are paralysed which communicate sensation and voluntary motion, as in others in which they exist in a normal state; and, on the other hand, the strongest action of the will can exercise no influence over the contraction of the heart, the peristaltic action of the bowels, or the process of secretion.

The phenomena of the mind cannot be explained as to their proximate, still less as to their ultimate causes, by our present principles of knowledge. We know no more than that they are in existence. We ascribe them to an immaterial energy; and indeed, so far as their manifestation is united with matter, we ascribe them to a power which is quite different, having nothing in common with vital power. This peculiar power, it cannot be denied, exercises a certain influence on the activity of vegetable life, similar to that exercised by immaterial forces—as light, electricity, warmth, and magnetism; but this influence is no settled property, and only makes itself known by accelerating, disturbing, or retarding the activity of vegetable life. In

an exactly similar way the activity of vegetable life reacts on the mind.

There exist two powers which are in action dependent on each other; but consciousness and reason may be wanting in animals and plants, without our missing any thing else in them excepting the absence of a peculiar cause of increase or diminution of action. With the exception of this, the chemico-vital processes in men and animals proceeds exactly in the same way.

The often-renewed attempt to explain the connection of the mind with the animal life has always retarded the progress of physiology. It is a continual departure from the realms of natural science into the empire of imagination. Thence the inspired physiologists were very far from recognizing the laws of the purely animal life. Not one of them had a clear conception of development or nutrition, or the real causes of death. They gave explanations of the most secret physical phenomena, and were not able to say what fever was, and how bark acted. To explain the laws of motion in the animal body the knowledge of the apparatus was the only thing investigated, which only communicates the motion; but the substance of the organ, the changes which the food undergoes in the living body, its transition into the constituents of the organ and again back into inanimate combinations, and the part which the atmosphere takes in the vital processes,—all these first principles were not considered.

What has reason, consciousness, or the soul, to do with the development of the foetus or with the young chick? certainly not more than in the development of the seed of a plant. Let us endeavour to refer non-physical phenomena to their ultimate causes, and let us be cautious of drawing conclusions before we have first principles. We know well enough the mechanism of the eye; but neither anatomy nor chemistry will ever explain why a ray of light attains to consciousness. The investigation of nature has certain bounds, which must not be transgressed. It must be always remembered, that in all our discoveries it can never be known what kind of things light, electricity, and magnetism, are; for the mind of man can only conceive those things which are material. We can inquire into the



laws of their conditions of rest and motion, because they are evidenced by phenomena. So, without doubt, can the laws of life, and all that interrupts, advances, or changes them, be inquired into, without our ever knowing what life itself is. The inquiry into the laws of the fall of bodies, and of the motions of the heavenly bodies, led to a previously unconceived idea of their cause. This idea could not have arisen in clearness without a knowledge of the phenomena from which the laws are developed; by itself the force of gravity is what light is to one born blind, nothing but an empty word.

The new science of Physiology has left the Aristotelian method; it allows no more *horror vacui*, no longer a fifth essence to give to credulous listeners explanations and interpretations of phenomena whose proper connection with other phenomena, and whose ultimate causes, are not made known to us.

If we hold the belief that all the phenomena in the bodies of plants and animals must be ascribed to an entirely peculiar cause, which is quite different from all other causes which produce change of condition and motion, and if we allow that the vital power is a power existing for itself, then we shall have, in the phenomena of organic life, as in all other phenomena which can be ascribed to power, a static state, that of equipoise depending on an opposing force and a dynamic state. All parts of the animal body are formed from a peculiar fluid circulating in the body, in consequence of an inherent activity in each cell, in each organ, or part of an organ. For physiology teaches that all the components of the body were, in their origin, blood, or that they were at least supplied to the existing organs by that fluid.

The most ordinary experience further shows that, during each moment of life, there proceeds a perpetual more or less rapid change of material in the animal body: that one part of the structure resolves itself into matter without form, losing its condition of life, and this must be again renewed. Physiology has decided reasons for thinking each motion, each expression of power, is the consequence of a decomposition of structure. That each idea, each pas-

sion as a consequence, effects changes in the chemical condition of the secretions, that each thought, each feeling, is accompanied by a change in the condition of the brain. For the support of the phenomena of life in animals, there are required certain materials, portions of organized bodies, which we call nourishing substances. By means of a series of changes, these serve either for increase of mass (nourishment), or for compensation for materials used (reproduction); or they serve for the production of power.

If we call the taking of food the first condition of life, the second is a constant absorption of oxygen from the atmospheric air. According to the principles of the natural philosopher, animal life makes itself evident in a series of phenomena, the continuance and repetition of which is caused by a change which the food and inspired oxygen of the air undergo in the body by the co-operation of the vital power. All vital activity arises from the reactions of the oxygen of the air and the constituents of the food. In the processes of nutrition and reproduction we recognise the transitions of matter from the state of motion into the state of rest (the static equipoise). By means of the influence of the nervous system, this matter acquired motion. The ultimate causes of these different states of vital power are chemical powers. For the cause of the state of rest is an obstacle which depends on a power of attraction (combination), which acts between the smallest particles of matter, and becomes evident only at immeasurably small distances, or in immediate contact. This special kind of attraction can, naturally enough, have different names. The chemist calls it affinity. The cause of the state of motion lies in the series of changes which the food undergoes in the body: in consequence of a process of change which the food itself, or the structures which arise from it, or the constituents of the organs, undergo.

The principal character of the vegetative life is a continual transition of the matters which are in motion into a state of static equipoise. So long as the plant lives there is no stoppage of increase to be remarked; no part of the organs of the plant decreases in mass. If any decomposition takes place, it is



a consequence of assimilation. A plant produces in itself no power of motion. No part of its structure loses its vital state, in consequence of a cause existing in its own body, and then passes over into combinations without organic form. No consumption of substance occurs in them. The consumption in animals is from change of condition, and from the decomposition of certain constituents of the animal body. It proceeds, consequently, by means of chemical action. The power of poisons and medicines over the living body evidently shows that the processes of chemical decomposition and combination in the animal body, which are known to us as vital phenomena may be increased by chemical power acting in the same way, and retarded or abolished by that acting in an opposite way; and that we can exercise an influence on each part of the body by substances possessing a determined chemical action.

Analogous, therefore, to the closed galvanic circle, by means of certain changes which an inorganic body, as a metal, undergoes by contact with an acid, a certain something becomes perceptible to our senses, which we denote by a current of electric fluid. So, from the decomposition and change of matter which formerly was part of the body, certain appearances of motion and action take place which we term life. The electric current makes itself known by means of certain phenomena of attraction and repulsion, which other materials, in themselves motionless, receive thereby; and it is known by certain phenomena of the formation and resolution of chemical compounds which appear everywhere, if obstacles do not hinder motion. From these principles alone, and from no others, ought the chemist to study the phenomena of life. We find cause for wonder in every thing; the formation of a crystal, an octohedron, is not more incomprehensible than the origin of a leaf or muscular fibre; and the formation of cinnabar from mercury and sulphur is quite as inexplicable as the formation of an eye from the substance of the blood.

[To be continued.]

## MEDICAL GAZETTE.

Friday, April 22, 1842.

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“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

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### THE SPIRIT OF MEDICAL REFORM.

*Est modus in rebus; sunt certi denique Fines,  
Quos ultra citraque nequit consistere Rectam.*

IN these lines the poet has embodied a sentiment which few are disinclined to assent to in the abstract, but many are apt to disregard in practice. If, at the end of this dry precept, he could have pointed out in what the *modus* consisted, where those *certi fines* were to be discovered, he might have gained the additional honour of having saved posterity from the exhibition of no small amount of folly, and from the consequences of many extravagant opinions and actions which they have to regret. The bequest of a standard for our conduct, to which we might refer upon all occasions, and under all changes, would be too rich a legacy to expect from any one, who was not himself free from human imperfections. Let us, however, recommend the condensed and important maxim he has left us, where it seems to apply; and we think it may with advantage be adduced in opposition to the restless spirit of the time, which is so averse to any thing like a moderate and dispassionate view of a subject, and also in refutation of those hasty and extreme opinions which are incessantly brought under our notice. The cry throughout the political world has long been that of reform; and we cannot be surprised that a voice so popular should be heard within the sphere of medicine, especially as so many evils confessedly exist in our profession, which have long demanded revision and correction. What those evils are, we have already endeavoured, in several previous numbers, to

bring before our readers, with such comments as seemed most likely to excite attention to them, and with such proposals for their improvement, as in our judgment were best suited to meet the present emergencies. Of good and sound reform we have ever been, and shall continue to remain, the consistent supporters, being fully aware of its necessity, and of the advantages to be derived from it. We have long seen the evils under which the practitioners of this country labour, and should rejoice in the prospect of seeing them relieved; at the same time we by no means assent to the bold proposition, that all change is to be esteemed as reform, but feel it incumbent on us to repudiate the exorbitant demands of those, who, not content with safe and moderate measures, are ever bringing forward preposterous and dangerous schemes, and who, not satisfied at the introduction of such regulations as may establish more securely, and render more efficacious, our present systems, are anxious to demolish those systems altogether, and to build on their ruins various chimerical projects of their own invention. When once the tide of reform has fairly set in, it requires no moderate force to turn it aside: it usually works its way in spite of all opposition, till at length we have cause to fear, not that we shall have no reform at all, but that we shall have too much. Even its best and most cautious promulgators are liable to transgress the limits which prudence dictates; and much more have we cause for apprehension from the ill-judged measures of those who are satisfied with nothing short of universal changes and wholesale abolitions. When the grievances under which practitioners suffered were first brought into notice, and the inefficiency of our corporate bodies to afford them full protection was made public, a spark was kindled which has by degrees been

fanned into a flame; and the apprehension we now entertain is, that the eradication of the evil complained of, will not be effected without the destruction of much good, which might remain. Reform in medicine may be said to have fairly commenced in 1833, when the College of Physicians, aware of the necessity of the case, proposed and adopted some measures for the furtherance of the general good; but the cry had gone abroad, and could not be appeased, except by changes of greater moment. It has ever since been heard at intervals, gradually progressing, till it has surpassed the bounds of reason, and now threatens to abrogate altogether our present system of administration, and to extirpate the Colleges, which have so long directed the helm of our affairs, and maintained the respectability of the profession.

We are far from subscribing to the opinions of those who place implicit reliance in the so-called wisdom of antiquity; at the same time, we must insist that existing institutions and customs do appear entitled to respect and deference, from the very circumstance of, and in proportion to, their antiquity. The period during which they have stood the test of time, and the attacks of violent men, in periods both of revolution and of peace, is a decided testimony in their favour—nay, more, it is a powerful argument for their preservation. If they have been so long serviceable to the ages and to the men they have survived, they ought to have credit given them for the capability of being continued with advantage; and surely this is no small argument to tender in opposition to the caprice and fancy of an innovator. It is sufficient, surely, to throw upon him the *onus probandi*—the duty of proving, to the satisfaction of those who are interested in the question, not merely the insufficiency or deficiency of what exists, not merely

that what he seeks to change is trite, old-fashioned, and ill adapted to the present time, but the obligation of clearly demonstrating, that what he proposes in its place, is not simply an alteration but an improvement—that it is remedial, and that it will not only supply the place of its predecessor, but that it will answer its purpose much better. Yes, we say it lies upon him not only to show the insufficiency of the thing removed, but to bring good evidence of the sufficiency of the thing substituted. We all know how easy it is to find fault, but the discovery of defects, though calculated to give men a great idea of their own talent and quick perception, is not of itself sufficient condemnation of what has fulfilled its required purposes for any length of time. Further, as each alteration of any long practised custom, especially if suddenly made, is generally attended with inconvenience to some, and the more radical the alteration the more extensively is the inconvenience felt, it becomes necessary to show that the benefits proposed will be commensurate. Unless there be rational grounds for supposing that the good to be derived from a change, will more than counterbalance the evil occasioned, one fundamental principle of reform must be wanting. In these remarks our object is solely, to restrain the desire of seeking and producing extreme measures, as well as to oppose that “*natura novitatis avida*” which is constantly endeavouring to introduce change, without a proper regard for improvement. We would not in any degree detract from the merit of those persons whose writings in this, and other journals, evince that their authors have well weighed the subjects on which they treat, and pronounce them to be in intention, if not in reality, benefactors to the profession. Such men deserve our warmest thanks for the assistance

they have rendered in promoting the great object of rational reform.

In medicine, more particularly than in any subject, should reform be instituted cautiously. The public and the profession are so closely bound up together in the existing usages, that a new system of regulations, which has for its purport the advantage of the one, may, in many instances, tend directly to the injury of the other. The existing divisions of the profession, for example, appear so evidently to have originated as the means best adapted to supply the wants of the public, as well as to forward the interests of science, that an unnecessary interference with them would undoubtedly be attended with inconvenience to both. In allusion to this subject, we may refer to a series of letters on the “Division of Medical Labour,” which have recently appeared at intervals in the pages of the *Gazette*, from the pen of Dr. Hull. They contain much sound practical observation, with many good arguments in favour of the present position of things, and show forcibly the evil which would attend on the amalgamation of the different branches of the profession.

It was with these feelings that, in a former number, we ventured to give our *general* approbation to the Bill of Sir J. Graham, which appears, so far as we have been able to ascertain its nature, to have the merit of avoiding extremes, and to have for its object the giving greater force to our Colleges, by removing some of the defective points in their organization, and thus rendering them more serviceable to the profession at large. The principle of this Bill appears to be confirmative rather than destructive; and we are rejoiced at being able to discover some probability of the questions, which have long agitated the medical world being at length decided on such safe grounds

as are proposed in it. It gives us some anchorage on which to rest in the troubled sea of discontent and danger—of doubt and perplexity, in which the profession has so long been embarrassed. While our best institutions are in jeopardy, and while attempts are constantly made, by the introduction of sweeping measures, to subvert those systems to which we are attached by time, and the advantages we have practically derived from them, it is no wonder that we are glad to rest upon any proposal, which, taking a moderate course, offers to restore tranquillity, and, at the same time, to better our condition. The Bill may in many points prove defective\*; and we must expect that, to a certain extent, such will be the case with any measure. The emergencies to be met, are so numerous that we cannot with reason anticipate that every object should be attained; and while conflicting interests are so various, while propositions from all quarters have been so numerous, we must be prepared to find that many will be dissatisfied. Alterations and revisions will doubtless be required in several of its clauses, before it be allowed to pass into a permanent act; but into the consideration of these we do not propose now to enter: we merely here repeat our approbation of the *general* principles on which it proceeds, in opposition to the outcry which has on many sides been so virulently urged against it.

#### ALLEGED DEATH FROM SALIVATION.

A CASE which was the subject of much interest, and some popular excitement, has recently occurred at Durham. The wife of one of the pitmen was attacked with symptoms which ended in typhoid fever, with gangrene of the cheek, and proved fatal. She was attended, in the first instance, by Mr.

\* See the letter of "A Surgeon and Apothecary," page 187 of our present number.

Hopton, a highly respectable surgeon in Durham; afterwards by Mr. Oliver; and, lastly, by Mr. Green. It appears from the evidence, that the gentleman first mentioned prescribed calomel, and to this the subsequent symptoms and fatal result were attributed. We have looked over the statements of the various witnesses, including the medical men, and are perfectly satisfied that there was no ground whatever for the charge, or rather, perhaps, insinuation, against Mr. Hopton; and for these reasons—first, that he gave very moderate doses of the mercury; and, secondly, that the symptoms were not such as result from that agent, the swelling and sloughing being confined to the upper jaw, while the gums of the lower jaw continued throughout entirely unaffected. The evidence of Mr. Green was perfectly straightforward and satisfactory; and we are happy to add that the verdict of the jury bears the same character; namely, that "the deceased came to her death from gangrene consequent upon typhus fever." Mr. Hopton thus stands entirely exonerated from blame.

#### COLLEGE OF SURGEONS.

WE understand that the Council have decided on recognising certificates from no Metropolitan Hospital with less than a hundred and fifty beds, and of no Provincial establishment having less than one hundred.

It is said that a series of *Conversazioni* are to be given at Lincoln's Inn Fields: if so, we hope they will answer better than did those at the College of Physicians.

#### UNIVERSITY COLLEGE.

##### PROFESSORSHIP OF MIDWIFERY.

WE learn that Dr. Murphy, of the Lying-in Hospital, Dublin, has been appointed successor to Dr. Davis, as Professor of Midwifery in University College.

#### STUDY OF INSANITY.

(From a Correspondent.)

UNDERSTANDING that Dr. Conolly, resident physician at the Hanwell Lunatic Asylum, has announced his intention of giving a course of lectures on insanity to a select number of medical pupils from the different London hospitals, we must acknowledge our satisfaction at this announcement, as it forms a new and important step to promote medical education, whereby the knowledge of a very interesting

and most prevalent class of diseases may be usefully extended amongst the rising members of the medical profession; the investigation of which maladies has hitherto been too much overlooked by the general student during his preliminary education, and afterwards by the majority of medical practitioners.

Unquestionably it does appear rather singular that in this country, where, unfortunately, so much insanity prevails in all ranks of society, from the pauper to the peer, nevertheless until of late very little attention has been directed to the diffusion of information, or to the instruction of students, in mental diseases; neither has any effectual attempt been made to render the great public establishments for the reception of the insane in the metropolis available for the purpose of investigating the pathology and curative treatment of insanity; as, for instance, Bethlem Hospital with upwards of 300 patients, St. Luke's with more than 200 lunatics, and the Hanwell Asylum, where nearly 1000 insane patients are at present accommodated.

These extensive fields for knowledge, having upwards of 1,500 insane patients, and where every variety of mental diseases must be constantly met with, have hitherto been almost entirely as sealed books to the great body of the medical profession, and consequently entailing a very serious loss to the community at large, who have the greatest interest in possessing experienced practitioners in this as in other diseases. However, it is satisfactory to learn that at last a new system is about being commenced; and should the example thus set at Hanwell be also imitated at St. Luke's, or at Bethlem Hospital, the benefit conferred by such proceedings will be important, and in every way most advantageous. Indeed, it appears that at Bethlem a similar feeling already prevails, since at the Quarterly General Court of the Governors of Bridewell and Bethlem Hospitals, held in January last, according to a report of the meeting given in the Morning Herald of Friday the 28th of that month, the idea of allowing a more free admission than heretofore to medical students into the wards of that richly endowed and well-regulated institution, for the purpose of study, was incidentally the subject of discussion; and judging from the remarks made on that occasion, the proposition was rather favourably received.

The question of granting admission to students to investigate and to learn the treatment best adapted for mental diseases in the wards of the metropolitan lunatic asylums, is one of great interest, and well deserves serious consideration, and would certainly be attended by the best effects to the community, whilst it would constitute a great

boon to those about to engage in the practical duties of the medical profession. And although some governors, from dislike to new measures, or their timid disposition about changing the present system, might entertain doubts or fears on the subject, lest such an innovation might act injuriously on the afflicted inmates of a lunatic asylum; such apprehensions would prove groundless provided the plan were carried out judiciously, and under proper regulations, lest even if a few patients were excited by the presence of young men accompanying the attending physicians during their stated visits to the wards, that is only a very partial evil, not at all to be put in comparison with its many other advantages. To pursue the subject any further appears unnecessary, trusting that the question will soon be better understood; in the meantime the proposed course of lectures intended to be given at the Hanwell Asylum is highly creditable to Dr. Conolly, and must have considerable weight as an example to the medical officers of other insane establishments, which they would do well to imitate.

## LICENSED LUNATIC ASYLUMS BILL.

### STATEMENT OF OBJECTIONS TO THE PRO- VISIONS OF THE BILL.

THE following objections to the above Bill, now pending in the House of Commons, intituled, "A Bill for amending the Laws relating to Houses licensed by the Metropolitan Commissioners and Justices of the Peace for the Reception of Insane Persons," are respectfully submitted to the consideration of Members of Parliament by an Association of Members of the Medical Profession who are proprietors of Provincial Lunatic Asylums.

By the above-mentioned Bill it is proposed to provide that all private Provincial Lunatic Asylums, and every patient confined in them, shall, in addition to the visits required to be made by the magistrates under the Act of the second and third years of the reign of King William the Fourth, be visited at least three times in every year by a Commissioner, whose only qualification for the office is to be his admission to practice *as a barrister-at-law*; which Commissioner is to have power, if he think fit, to call in the assistance of any medical practitioner, of whatever grade, whether physician, surgeon, or apothecary, provided he be not appointed by the justices at quarter sessions a visitor of the Lunatic Asylum to be inspected, or interested therein, and with the concurrence of such person, after *two* visits, to order the discharge of any patient confined in such



Asylum, who shall not have been found a lunatic under any commission issuing out of the Court of Chancery, or shall not be confined under the order or authority of Her Majesty's principal Secretary of State for the Home Department.

It is submitted that such provisions are inexpedient as regards the proper care and treatment of lunatic patients, derogatory to those members of the medical profession under whose charge such members may be placed, and fraught with danger to the public.

Provincial Lunatic Asylums are now by law subject to inspection three times every year by magistrates duly appointed, and by medical men of eminence selected for the purpose by the justices assembled at the quarter sessions for the counties in which such asylums are situate, and the system of visitation thus instituted has, it is believed, when duly carried out, fully answered the purposes for which it was intended.

The powers of the magisterial visitors are to remain unrepealed by the present Bill, and the decisions of the new tribunal to be created in the person of a Barrister Commissioner, accompanied by any medical man whom he may call to his aid, may therefore be frequently at direct variance with that of the magistrates and their sworn physician.

The frequency of the visits to lunatic asylums which would be occasioned by the proposed Bill are calculated to keep up a degree of excitement in the patient, detrimental to his proper treatment, and obstructive of his recovery.

It is often difficult, with the greatest nicety of medical discrimination (especially in cases of convalescence), to detect the presence of this most insidious disease, of which fact the public Reports of the Metropolitan Commissioners in Lunacy afford sufficient evidence, inasmuch as it thereby appears that, notwithstanding great care and precaution on the part of such Commissioners, patients have been discharged as sane under their orders, who have been in a short time returned to confinement as confirmed and dangerous lunatics.

The proposed Bill, in addition to the highly dangerous and almost absolute power given to a Barrister, of ordering the discharge of lunatic patients, subject only to the approval of any medical practitioner, however inexperienced, whom he may call to his aid, contains other provisions, unnecessarily onerous as well as humiliating to the members of the medical profession, by authorising such Commissioner to write in a book, to be kept for the purpose at every lunatic asylum, whatever strictures or observations may suggest themselves to him on the conduct of the proprietors of such asylums, and by compelling such proprietors, under heavy

penalties, themselves to forward copies of such strictures and observations within three days, to the clerk of the Metropolitan Commissioners, although it is manifestly the duty of such Commissioner, or the clerk of the visitors, if there be any cause of complaint with regard to any lunatic asylum, to report the same to the Metropolitan Board, with the reasons on which it is founded, they being *paid* for the performance of their duty.

Although proprietors of lunatic asylums may be liable to actions for the escape of patients under their charge, yet the present Bill proposes to compel such proprietors, under a heavy penalty, themselves to furnish the evidence of such escape, by giving notice thereof, within two days, to the clerk of the Metropolitan Commissioners, the effect of which must necessarily be to induce such proprietors, however reluctantly, to increase, for their own protection, the restraint now exercised towards lunatic patients.

The Bill also proposes to give the Barrister Commissioner a power hitherto unheard of in this country, of holding a court of inquiry whenever he may see fit, in any lunatic asylum, and of compelling the attendance of witnesses before him under heavy penalties, and their examination on oath; whilst, against the decision of such barrister, however improper, no appeal is provided.

It is therefore respectfully submitted, that the provisions of this Bill are unnecessarily inquisitorial and unjust towards proprietors of lunatic asylums, inexpedient as regards the public, and injurious instead of beneficial to the particular class of persons whom they are intended to protect, and that they will tend to prevent the superior classes of the medical profession from embarking in an occupation in which they would be subjected to much unjust suspicion, and to such arbitrary interference in the discharge of their professional duties.

The best security which the lunatic patient can have is in the respectability, the intelligence, and the experience of those intrusted with the charge of lunatic asylums, aided by a well-regulated system of inspection; but the present Bill is calculated to produce effects the very contrary of those for which it is ostensibly intended to be enacted.

Under these circumstances it is earnestly sought that the said Bill may not pass into a law without a previous inquiry in a Select Committee, before which the parties aggrieved by its unusually harsh provisions might have an opportunity of being heard, and of tendering evidence in their defence.

*Mr. Wakley's Amendment.*—The House of Commons went into committee on the bill to which the above refers on the 20th, when it was moved by Mr. Wakley as an

amendment, "That two of the Commissioners to be appointed should not have their profession stated, and that their appointment should be left to the Lord Chancellor." This was opposed by the mover of the bill, Lord G. Somerset; but, we are happy to say, Mr. Wakley's amendment was carried. The farther proceeding in committee was then postponed till that day fortnight.

### MEDICAL REFORM.

*To the Editor of the Medical Gazette.*

SIR,

MAY I be permitted to make a few remarks on the subject of medical reform in connection with Sir James Graham's proposed Bill.

It may be presumed that any such measure must have for its object the welfare of the medical profession and that of the public community; but neither of these two great ends seems likely to be secured by the Bill in question. On the contrary, it is calculated to degrade the general practitioner in two ways: First, by not protecting him from the intrusion of uneducated and unlicensed persons, thereby ranking him in society and profession with the ignorant and unprincipled (for any man must be unprincipled who, without being qualified, undertakes the duties of the medical profession), and diminishing his prospect of that fair remuneration to which he is entitled after a laborious and expensive course of study;—second, by entrusting the examination of candidates to the College of Physicians, instead of allowing it to remain in the hands of the general practitioner, as it at present stands. Such an alteration would operate in two ways: it would be pronouncing the body of general practitioners unworthy of, or incompetent to discharge, the duties of so important an office; and it would at the same time be the means of depriving them of all future means of seeking the advancement of their own body in professional attainments and respectability. Are they unworthy of, or incompetent to undertake, so high a trust? Let the manner in which the Society of Apothecaries, for the last 25 years, have worked out their Act of Parliament afford an answer to that question. By gradually requiring a more extended education, and by instituting a higher style of examination, they have at length brought up their curriculum of study and test of examination to a degree of excellence admitted by all. The names of several gentlemen might be mentioned who, for years past, have been labouring in that field of usefulness, and have been aiming at the elevation of the character and education of the general practitioner. Such men, by their persevering labours in

such a cause (labours in great part unacknowledged and unseen by the public), have secured the diffusion of knowledge throughout the profession generally, which otherwise would have been confined to a few. But would it be the interest of the College of Physicians to follow in the same steps? In reply to this question I would beg leave to quote the following from the *MEDICAL GAZETTE* of last week:—"We more than fear that, in some quarters, the increased attainments of the general practitioner have been looked upon with feelings anything but kindly: it has been more than hinted that the apothecary must be pushed back from the dignified position which, by dint of hard labour and virtuous exertion, he has just (very justly) attained, in the expectation that, when that light is dimmed or extinguished, others may shine more brightly."

If this affected the general practitioner only, it might be of little comparative importance; but it affects the public as well as the whole profession. The forward movement in education began, as has been honestly stated, by one of the latest and most able writers on this subject, from the lowest grade of the profession: it impelled, and still continues to impel, the other bodies to continued exertion, in order to maintain their more elevated position; and we are convinced that the general practitioner cannot be degraded without damaging the reputation and influence of the profession at large. If this be true, and no one can deny it, would it be just to the general practitioner to take from him the means of maintaining and promoting the welfare of his own body, by transferring the duties of examination, and the regulation of the course of studies, to another body whose interest it would be to create a wide distinction between the two by the elevation of themselves at the cost of the other. It is a principle of justice, that every individual and every body of individuals should possess the means of self-improvement and advancement: but how is this important object to be effected by the large class of general practitioners, if they are not to possess within themselves the power of fixing on a high standard of education and examination to be submitted to by all who may wish to become members of their body? As Sir J. Graham's Bill is calculated to degrade the general practitioner, so also does it bid fair to be injurious to the public by not protecting them from the mal-practice of the ignorant. If any persons, whether licensed or not, be permitted to practise, the country will be overrun by the uneducated and needy adventurer, and no one can tell the extent of the evil. Instances of such mischief must be known to many. I have myself seen a patient in a fatal fit of apoplexy, with a number of leeches applied to the throat; the

practitioner who was called in having mistaken the stertorous breathing for that of croup. I have seen a contused thigh put up in splints for a fractured one; and I have known a woman in labour, with an arm presentation of the child and the hand protruding, left by the practitioner, saying that every thing was going on right, and that they must wait the result of more pains. But all these cases happened to the unlicensed and the uneducated who were in practice prior to 1815, and could not occur in the present day: yet they may occur; and such cases must frequently again occur, if the proposed Bill ever became law. In conclusion I would say, let the general practitioner protest against, and steadily resist, any measure that does not secure to him two things—protection against the unlicensed, and the regulation of his own body; or, in other words, the means of maintaining and advancing the education and general attainments of the great bulk of the medical profession.—I am, sir,

Your obedient servant,

A SURGEON AND APOTHECARY.

April 14, 1842.

### QUALIFICATION FOR "UNION DOCTORS."

*To the Editor of the Medical Gazette.*

SIR,

IN your leading article for the 15th instant, in the midst of an able and liberal commentary upon the new medical regulations of the Poor-law Commissioners, there occurs a passage from which it would appear that one important point in the Qualification Order has escaped you. "If," you say, "a practitioner possesses an English qualification as physician or apothecary, and a surgical one from Ireland or Scotland, they (the Commissioners) will allow him to be elected, on application from the guardians for that purpose." "This," you add, "seems right."

But on referring to the context, we find that this apparent liberality is extended only to cases of positive necessity; to cases where guardians cannot procure the services of a person possessing the double English qualification. In fact, wherever a medical man is forthcoming who has that qualification, the member of a Scotch or Irish College of Surgeons, even if also a licentiate of the Apothecaries' Company in London, is virtually disqualified, is publicly declared unfit to attend even the poor; and is thus indirectly marked out as being especially undeserving of the confidence and patronage of the paying classes. Surely, sir, you will not say that "this seems right." Fearful of

misinterpreting the article in question, a Member of the College of Surgeons, Edinburgh (and L.A.C.L.) wrote to the commissioners to inquire whether practitioners in his position were, by that article, admitted as eligible to Union office, *equally* with those who had the double English qualification, or only in cases of *necessity*. The answer was, a reference to the regulations and the explanatory letter accompanying them.

One point of real, but scanty and solitary liberality, does indeed appear. Medical officers, duly licensed to practise as medical men, and already employed by a Board of Guardians, may, with the consent of the commissioners, be retained in office. But if such practitioners, although heretofore in office, do not happen to be so at the present time, they are evidently incapable of re-election. And is it not preposterous that a person, whom the commissioners designate as one duly licensed to practise, and who, in the letter of explanation, is said to be viewed by them "as virtually possessing a double qualification," should, under any circumstances, while able-bodied and respectable, be excluded from pauper practice?

What is intended by these illiberal distinctions? Is it meant simply to declare that Scotch and Irish surgeons are illegal practitioners in England or Wales? or is it in prospect that the new order will compel such surgeons to take out a second diploma in London? If the former be the object of the commissioners, it is in the very teeth of the two Acts of Parliament which are cited in the appendix to the recently published list of the members of the London College. Those acts (relating to juries and the visiting of gaols) apply solely to England and Wales; and yet they expressly give equal immunities and privileges to the members of the three British Colleges of Surgeons. The legislature, in exempting members of the Edinburgh and Dublin Colleges from service as jurymen in England and Wales, acknowledges the legality of their practice in those divisions of the empire; and in affirming that they are eligible as surgical inspectors of gaols, with equal clearness admits their qualification and competency as surgeons.

And after the disclaimer from Mr. Guthrie of having had any part in the framing of the qualification rules, can we for a moment suppose that any selfish views on the part of his College have influenced the Commissioners? That gentleman's high-spirited language to the Committee on Medical Education and Practice in 1834, added to the liberal wishes professed in his exculpatory letter to Mr. Hovell, render any such supposition incredible.

The worthy President excuses himself for not having pressed "any further alteration,

at this moment, on the attention of the Poor-Law Commissioners," upon the plea that Sir James Graham's bill for the improvement of the medical profession, which he intended to introduce into Parliament this session, will, if carried into effect, settle the matter in a highly satisfactory manner. But it is now well known that there is great improbability of the bill being brought in this session. Are we, then, to suffer for a year, perhaps for many years, a grievance whose injustice is admitted by Mr. Guthrie, and, according to his showing, by one of the Poor-Law Commissioners; and this a new grievance, too, created by the Commissioners themselves? Are we to suffer this merely because the older grievances that weigh upon various classes in the profession cannot yet, conveniently, be redressed? We are content to bear the ills we have for any requisite time longer; but surely this is no time to burden us with new ones. It must, I think, be the feeling of every Scotch and Irish surgeon who is also an English apothecary, and who is disqualified for office in a Union by this new medical order, that the obnoxious article ought to be immediately modified by the Commissioners, or if they refuse, then even by Parliament itself.

Your insertion of the above remarks will confirm the rising character of your journal for liberality and justice, and will, I think, oblige many besides

Your very obedient servant,  
EDINBURGO-LONDINENSIS.

## MR. GUTHRIE AND THE UNION DOCTORS.

*To the Editor of the Medical Gazette.*

*Evans.* "Sir John, good worts."

*Falstaff.* "Good worts, good cabbage."

*Merry Wives of Windsor.*

SIR,

I AM one of a rather numerous class of the profession, who, for the most part, have looked on in silence, whilst much ink has been shed, and much breath expended, professedly with a view to our benefit. In a word, sir, I am a "Union Doctor," to use the happy and appropriate language of the President of the Royal College of Surgeons.

Referring to that gentleman's communication to Mr. Hovell, (is he also a "Union Doctor?") as published in the *MEDICAL GAZETTE* of March 27, I am ashamed to confess my belief, that in no case has there been a greater disproportion between the amount of benefit rendered to the cause advocated, and the self-complacency with which merit has been assumed for imaginary services. In truth, if it were for a moment possible to doubt the honesty and good faith of Mr. Guthrie's intentions, I should apply

to his labours the language of Troubridge, reporting to Nelson the services of his foreign allies—"that they had a diabolically good understanding with the enemy."

Mr. Guthrie's language is not always very clear, perhaps; but his general meaning is plain enough: viz. to convey an impression that the Poor Law Commissioners are very good fellows—perfect gentlemen, every inch of them; with the highest respect for, and best intentions towards the medical profession; and thwarted in their liberal views by those confounded Boards of Guardians, where all individual responsibility is lost, as a body readily adopts principles which each member may disavow at will.

Mr. Guthrie, if not an "old bird," is, at least, an "old soldier," and should not have been taken by the chaff in which he seems disposed to feast himself.

He asserts or admits that there is at present no security that Boards of Guardians generally will act up to their duty in ensuring (by adequate payment) the reality of proper medical attendance for the poor; and that this state of things is not likely to be changed, unless a principle of remuneration be laid down and enforced by the Poor Law Commissioners. Yet, strange to say, almost in the same breath, he confesses he could not press on Mr. G. Lewis, "consistently with that courtesy which is due to all public functionaries"—the inquiry whether the Poor Law Commissioners have the power of establishing a guiding principle of fair remuneration.

How amiably polite! I will venture to say that Mr. Lewis in return will give a high character to Mr. Guthrie; and, at the least, pronounce him a very agreeable person in his mode of transacting business with "public functionaries."

I am sorry to say, sir, that experience of what has taken place in my own part of the country, with observation and inquiry as to what passes elsewhere, have strongly impressed on my mind a view altogether opposed to Mr. Guthrie's. I believe that from the commencement of the commission, and in particular at the time when districts were formed and salaries fixed, none have done more to lower the estimate of medical services, by a uniform, though guarded tone of sneering depreciation, than the agents and representatives of the Board in London; I mean those well-paid and lightly-worked officials—the Assistant-Commissioners. With them I confidently assert (there may be individual exceptions) that "the guiding principle" generally adopted and recommended to Boards of Guardians, has been the rule, in this case most false and sophistical, "that a thing is worth what it will bring;" and consequently a reference to economy as the main object in fixing medical salaries: a rule

or principle, be it observed, not in the slightest degree affected by the promised abolition of tenders, the prevalent extent of which has been grossly over-rated, and has consequently been dwelt upon to the comparative neglect of points infinitely more important.

Be assured, sir, that if any real service is to be rendered to us poor devils of "Union Doctors," something more is required than fair words. "*Suaviter in modo*," if you please; but "*fortiter in re*" is indispensable. The attack must be made, not on out-posts, but on the key of the whole position.

Nothing can be more clear than that the Commissioners, if they were really in earnest on this point, might and would express an opinion as to the impossibility that justice can be done either to the poor or to the profession without an adequate rate of payment for medical services; and would instruct their subordinates to explain and enforce such views to Boards of Guardians.

Assistant Tithe Commissioners meet with no insuperable difficulties in adjusting the mutual or conflicting interests of tithe-owners and tithe-payers. How could an Assistant Poor Law Commissioner better deserve his £800 per annum than by being employed to perform a somewhat similar office, as between rate-payers, the poor, and the "Union Doctors?" Each district might then have a fair salary attached to it, on a due consideration of its size, population, character, &c.

These, sir, are mere truisms; and I repeat, that if the Poor Law Commissioners had been, or were now in earnest, they would not have failed to adopt a line of proceeding more obvious and familiar to them than to any other parties.

With these views, sir, you will not be surprised if I should fix a low estimate on the benefits likely to arise from Mr. Guthrie's suggestion, that the members of the profession should direct their efforts to "strengthen the hands" of the Poor Law Commissioners, so as to enable them, not only to declare the principle of remuneration they are pleased to adopt, but also to carry out and enforce its details in a satisfactory manner.

"Where there is a will there is a way;" the powers of those gentlemen are sufficiently cogent for most purposes; and if there were any doubt as to their extent with reference to this particular subject, I venture to assert, with confidence, that the faintest expression of a wish by them for an enlargement of those powers, would have received the unanimous support of all parties in parliament and out of it. They have not asked for anything of the sort; and it seems a just inference, either that they deem their powers, *quoad hoc*, sufficient; or that they do not care to ask for such as might throw on their

shoulders that responsibility for non-interference which they at present contrive to evade.

I may, with your permission, hereafter trouble you with a few comments on their late regulations, particularly with reference to the system of paying for operations, &c. "by the job," a practice originating in a system of generally inadequate remuneration, and, as I conceive, offensive and degrading as applied to the members of a liberal profession.—I am, sir,

Your obedient servant,  
A UNION DOCTOR.

April 6th, 1842.

## COLLEGE OF PHYSICIANS.

SENIOR AND JUNIOR FELLOWS.

*To the Editor of the Medical Gazette.*

SIR,

THERE is a suggestion in your number of last week respecting the title to be in future given to the *now* "Licentiates" of the College of Physicians, which, it strikes me, if acted on, cannot fail to give great satisfaction, and especially conciliate those desirous of joining the College. Perhaps the fact may be regarded as some evidence of my not being altogether free from the pettiness of our nature; nevertheless, I shall (under my mask) confess that one of the reasons which has prevented me from presenting myself for examination is the prospect of being written down "Licentiate." I never see the word without feeling that I should be assimilated to the respectable individuals "*licensed* to sell beer to be drunk on the premises." There is another precedent for the phrases, "Junior and Senior Fellows," proposed by your correspondent (besides those which he has mentioned), in the titles of members of the University of Dublin of different standing.—I am, sir,

Your obedient servant,  
M. D.

April 18, 1842.

## CIRCULATION IN THE BRAIN.

*To the Editor of the Medical Gazette.*

SIR,

WITH respect to the communication of Dr. Haworth, of Bolton, in last number of the MEDICAL GAZETTE, I would observe, that the experiments of Dr. Kellie, of Leith, prove that the circulation of the blood in the brain is completely exempt from atmospheric pressure, and that this pressure is not experienced, either directly or indirectly, in the brain "*whenever blood-vessels or nerves*



*escape from the skull,"* but only when a portion of the skull is actually removed. Such are the results of Dr. K.'s experiments. The views of Dr. Haworth, on the contrary, are founded on the supposition of atmospheric pressure being exercised on the whole mass of the brain, as well as upon its blood-vessels. This doctrine holds a very prominent place in both of his communications, particularly the concluding paragraphs of the last. Now such an opinion is so obviously opposed to the experiments alluded to, that to occupy your valuable space with any further remarks would be preposterous.

In conclusion, Mr. Editor, allow me to say, that my note to Dr. Haworth was penned in the most friendly spirit. However inconsistent his views may be with experimental observations, they are certainly very ingenious : my only object in noticing them publicly, was to prevent their assuming the position of facts. With regard to aeronauts not experiencing the sensations of vertigo, &c. &c., felt by those who ascend high mountains on foot, I never thought of calling in question this well-known fact, but cannot consent to the explanation of it given by Dr. H. The manner in which he *makes* Dr. Holland appear to confirm his views on this point, is certainly more commendable for its novelty than its philosophy.

I am, sir,

Your obedient servant,  
JOSEPH BELL.

Barrhead, April 14, 1842.

## SOFTENING OF THE HEART, WITH THINNING OF ITS PARIETES.

DR. STOKES said that the heart before him was taken from an individual whose case possessed more than ordinary interest, from the great doubt and difference of opinion to which it gave rise. He would detail briefly what he knew of the history of the case. It was an example of that class of affections which every practitioner must have met with at some time or other, in which the diagnosis remains obscure although most of the symptoms are of an important character. The case he was about to detail would furnish an example. An individual, who appears to be in good health, looks well, has a good appetite, is strong, able to take exercise, and to fulfil the duties of an active profession, applies for medical advice, and the only thing remarkable about him is a singularly irregular and rapid pulse, so quick and so deficient in regularity that it is almost impossible to count it. The action of the heart is also irregular and cannot be analyzed. Of this description of case Dr. Stokes said

that every practical man must have seen examples. Looking to the specimen before him it would be hard to define what was its exact pathological condition. The person from whom it was taken had the peculiarity of circulation, already mentioned, for several years. Some years since he left this country for a warm climate, and was at that period in perfect health. After residing there for seven or eight years, he was attacked with one of those affections incidental to warm climates, and consulted a military medical officer, who, having remarked the singular state of the circulation, was informed by the patient that he had noticed this condition a long time before ; soon after this he was invalided and sent home. He arrived in this country somewhat reduced in strength, but in a short time recovered, with the exception of some cough and difficulty of breathing. He consulted a very eminent medical man, who gave it as his opinion that it was a case of dislocation of the heart consequent on empyema of the left side. He then went to London, where a different opinion was given (the exact nature of which Dr. Stokes did not know), and after some time returned again to Dublin. When seen by Dr. Stokes he had the appearance of a man in good health. He complained of a cough and difficulty of breathing, particularly on making any active exertion, but stated that he could go about and enjoy society. There was one peculiarity in his case worthy of attention : he stated that he was always better when he took a free allowance of wine, and that abstinence or depleting medicines made him worse. He had no anasarca, nor was there any thing in his countenance expressive of disease of the heart. The pulse as before described, the action of the heart quick and irregular but feeble, and the sound on percussion over the præcordial region not remarkably dull. There was no evidence of effusion into the pleura, and his cough was merely a slight dry catarrh. Dr. Stokes recommended him to go down to the country, and remain there for some time. During his stay there he contracted a bad bronchitis, and let it run on for a week without using any remedy. He returned to Dublin, and when seen by Dr. Stokes he had violent bronchitis, with sonorous and wheezing rales anteriorly ; posteriorly in both lungs, towards the lower parts, an intense muco-crepitating rale was heard. The action of the heart now became more feeble and irregular, while the same rapid action continued ; and the pulse grew daily weaker and fainter, until it could no longer be felt at the wrist ; and his limbs became oedematous, blue, and cold. The impulse of the heart became gradually weaker and weaker, until at last it appeared to cease altogether. He remained

in this state for four days, and then died. Every kind of stimulant was employed with the view of rousing the action of the heart, but without effect. In one night he used a bottle of brandy, and a considerable quantity of wine. The misery he endured from an overwhelming sense of exhaustion appeared to be extreme; and as his voice, which was naturally strong, never failed him until a few moments before death, his outcries were truly heart-rending. The symptoms connected with the heart were, extreme irregularity, and extreme rapidity of action, absence of murmur, and very feeble impulse. On opening the thorax the heart appeared to be greatly enlarged; but this arose from the distension of the right ventricle and auricle, which were very much enlarged and filled with blood. There was no trace of inflammation anywhere. The right ventricle was thin, and appeared to contain more adipose substance than usual, but was not in the fatty condition described by Mr. Smith at a former meeting. The left ventricle was enlarged, but not thickened. The whole substance of the heart was softened; so much so, that it broke down readily under the finger; and in taking the organ out of the thorax, a rent occurred, passing from the posterior part of the right ventricle across the septum cordis. All the valves were healthy. Dr. Stokes observed that this case would throw some light on the general nature of the disease. There was one point to which he would allude briefly: Laennec states that clearness of sound in affections of the heart indicates dilated cavities; without denying this, Dr. Stokes would remark that clearness of sound indicated not merely dilatation of cavities or mechanical thinning, but also strong action of the muscular fibres of the organ; dilatation and thinning might occur without increased clearness of sound.—*Dublin Journal of Medical Science.*

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

*Friday, April 8, 1842.*  
H. H. Handey.—W. H. Horsell.—J. E. Stocks.—G. Johnson.—J. C. Whaley.—J. T. Pearson.—S. Waudby.—T. M. Gunn.—G. M. Phillips.—A. H. Newenham.—F. J. Genet.—J. G. Sanders.—J. H. H. Lewellin.

*Friday, April 15, 1842.*  
J. Deakin.—W. J. Hill.—W. Carter.—O. R. H. Wucherer.—H. F. Carter.—M. T. West.—S. Michell.

*Monday, April 18, 1842.*  
D. Morgan.—J. Serjeant.—W. N. Boyer.—E. Gaskell.—W. N. Clarkson.—W. Goey.—W. Player.—T. B. Gildersleeves.—B. Barkus.—J. Nicholson.—D. K. M'Nab.—T. E. Lander.—S. Mason.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, April 14, 1842.*  
J. C. Pigg, Luton, Bedfordshire.—S. S. Stedman.—R. Pincott, Nuneaton.—W. Procter, York.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, April 19, 1842.

Small Pox .....	1
Measles .....	17
Scarlatina .....	5
Hooping Cough .....	36
Croup .....	13
Thrush .....	2
Diarrhoea .....	5
Dysentery .....	0
Cholera .....	0
Influenza.....	3
Typhus .....	20
Erysipelas .....	5
Syphilis .....	2
Hydrophobia.....	0
Diseases of the Brain, Nerves, and Senses ..	138
Diseases of the Lungs, and other Organs of Respiration.....	266
Diseases of the Heart and Blood-vessels ....	24
Diseases of the Stomach, Liver, and other Organs of Digestion .....	53
Diseases of the Kidneys, &c.....	3
Childbed .....	3
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	2
Rheumatism .....	1
Diseases of Joints, &c. ....	2
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	100
Old Age or Natural Decay.....	58
Deaths by Violence, Privation, or Intemperance .....	21
Causes not specified .....	2
Deaths from all Causes .....	791

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.*

<i>April</i>	THERMOMETER.	BAROMETER.
Wednesday 18	from 28 to 45	29.97 to 29.98
Thursday . 14	29 46	29.90 30.01
Friday . . . 15	34 47	30.02 30.04
Saturday . 16	30 48	30.07 30.11
Sunday . . 17	32 47	30.14 30.11
Monday . . 18	36 47	30.13 30.14
Tuesday . 19	35 52	30.13 30.11

Wind, N.E.  
On the 13th, overcast, raining frequently during the day; a heavy shower of hail about 5 h. 30 m. P.M. The 14th, cloudy, sun-shine at times. The 15th, evening clear, otherwise cloudy. The 16th, generally clear. The 17th, a general overcast, a little rain fell in the evening. The 18th overcast, sun-shine at times. The 19th, morning clear, otherwise cloudy.  
Rain fallen, .12 of an inch.

CHARLES HENRY ADAMS.  
WILSON & OGILVY, 57, Skinner Street, London.

THE  
LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, APRIL 29, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Dysentery. Diarrhœa adiposa. Intestinal concretions. Worms.*

ANOTHER of the morbid fluxes from the alimentary tube, of which I have yet to speak, is *dysentery*.

Its characteristic symptoms are, griping pains in the abdomen, followed by frequent, mucous or bloody stools, straining, and tenesmus. In chronic cases pus is sometimes discharged from the bowels. The acute form or stage of the disease is attended with fever.

The differences between dysentery and diarrhœa are obvious enough. Both of them may be accompanied by griping pains: in both the stools are frequent and loose: but in diarrhœa they are fecal; in dysentery there is retention of the natural feces, or they are expelled, from time to time, in small, hard, separate lumps, termed *scybalæ*. Again, straining, and tenesmus, and the excretion of mucus, which is often tinged with blood, form no necessary features in diarrhœa; whereas in dysentery these symptoms are prominent and constant. These nosological distinctions are true and useful, although in our actual intercourse with the sick we do not find them always or strictly observed. Some of the worst forms of dysentery commence with the ordinary symptoms of diarrhœa.

Dysentery consists, essentially, in inflammation of the mucous membrane of the large intestines; yet not, I apprehend, of the whole of that long surface indiscrimi-

nately. Observation of the course of the disorder during life, and of the morbid appearances visible after death, leads to the conclusion that in simple dysentery, marked by tormina and tenesmus, and frequent dejections of sanguinolent mucus without fecal matter, the inflammation chiefly affects the *rectum* and the *descending colon*. When the earlier portions of the large intestine are involved in the diseased process, the stools at the outset are often composed in great measure of excrement in an unnaturally fluid state, and mingled with blood and slime. We generally speak of these circumstances as constituting *dysenteric diarrhœa*.

Slight and simple dysentery may occur and run its course with very little or no disturbance of the circulation. When it is acute and severe, it is attended with more or less pyrexia. The acute disease may terminate in recovery; or in early death; or in chronic dysentery, which usually, in the end, is fatal.

The wards of our metropolitan hospitals bring frequently under our notice severe cases of chronic dysentery in the persons of soldiers and sailors, who bring the disease home with them from hot climates. With these exceptions, dysentery is, now-a-days, neither a very common nor a very serious disorder in this country. I say now-a-days, for the time was when it raged in London like a plague. The present Dr. Heberden, in his valuable essay, *On the Increase and Decrease of different Diseases*, shews, that in the 17th century the number of deaths set down, in the weekly bills of mortality, under the titles *bloody flux*, and *griping in the guts*, were never less than 1,000 annually, and in some years exceeded 4,000. For five and twenty years together, viz., from 1667 to 1692, they every year amounted to above 2,000. During the last century, the number gradually dwindled down to 20. Dysentery is one of the pests of hot climates. In all tropical regions at certain seasons of the year it is very prevalent and

destructive. But it is in fleets and armies, and especially among troops in actual service, that the distemper most displays its terrible power. There is no single malady which is so crippling to an army in the field as this. Sir James M'Grigor, to whom was entrusted the superintendence of the medical department of the army "on the two greatest services on which the military force of this country has, of late years, been employed, namely that in Walcheren, and that in the Peninsula," calls dysentery "the scourge of armies," and "the most fatal of all" their diseases. In two years and a half, the British army in Spain lost no less than 4717 men by this complaint.

How are these facts to be explained? Wherefore is dysentery, which was so familiar to our ancestors, so happily rare among us? Why does it thus wait upon and afflict the march of armies? Upon what depends its frequency in hot climates? We may expect to obtain some answer to these questions by searching into the *causes* of the disorder.

It has been ascribed to exposure to wet and cold; to the use of unwholesome food; to the agency of malaria; to contagion.

Weather and season have a manifest influence in the production of dysentery. In temperate climates, like our own, it is an autumnal disorder. In tropical countries it is observed to be more common and more severe when rains succeed to long-continued drought. In respect to this, as to other bowel affections, a high diurnal temperature of the air appears to be the predisposing, and exposure to cold the exciting cause. I stated, on a former occasion, that great vicissitudes of temperature are very frequent and very pernicious, even under the torrid zone. Scorching days are followed by extremely cold nights. The dysentery which arises under these circumstances is apt to run on into the ensuing winter. Soldiers in the field against an enemy are peculiarly obnoxious to the agencies which favour or generate the complaint. Marching, or engaged in actual conflict, during the day; bivouacking at night, often in the open air, and under every variety of weather; ill-provided too often with clothes and bedding; their food scanty, precarious, or of bad quality; seizing the many opportunities which their dreadful trade supplies of license and intemperance; depressed, it may be, by disaster or defeat; we need not wonder either at the prevalence of dysentery among them, or at its untractableness while they remain subject to the same morbid influences. Neither can the causes be warded off from the patient, nor, in general, can the patient be removed from the causes. Yet occasions do arise which show distinctly enough this alleged relation of cause and effect. *Præsens*

*morbum facit—sublata tollit.* Take, on the one side, the following facts from Sir John Pringle's book *On the diseases of the army*. The men who had fought at Dettingen lay that night on the field of battle, without tents, exposed to a heavy rain. For the next night or two they encamped on better, but still wet ground; and they wanted straw. Nearly half of these troops were soon after affected with dysentery; while three companies which had not been engaged in the battle, nor exposed to rain, nor lain wet, escaped the complaint entirely. Take this converse fact, related by Desgenettes. Four hundred of the French "army of Egypt," reduced to a state of extreme weakness and emaciation by dysentery there contracted, embarked at Alexandria on their return towards France; were carried away, in short, from the alleged causes of their disorder. Nineteen died at the very outset of the voyage; which had, however, so good an effect upon all the rest, that before they reached Malta they were thoroughly convalescent.

The very frequent coincidence or alternation, in some places, of dysentery with intermittent fever, has given rise to the opinion that both these diseases are alike attributable to the malarious poison. But dysentery prevails where there is no other evidence of the presence of malaria. You may recollect that when we were upon the subject of ague, I showed you that its repeated paroxysms were attended with extreme and increasing congestion of blood in the internal organs; of which congestion the tumid spleen, the ague-cake, was an effect and a token. Now whatever gorges the splenic vein, gorges its tributary, the inferior mesenteric, which carries the blood from the rectum and the descending colon. Upon such congestion of the mucous membrane inflammation is readily engrafted; and in this indirect way dysentery may be said to result from the marsh effluvia. Ague is an effect of malaria; and dysentery is, sometimes, a sequela of ague. In precisely the same manner, dysentery is apt to supervene, in hot climates especially, upon hepatic congestion and disease.

That dysentery is, in itself, a *contagious* malady, we have no satisfactory evidence. In its sporadic form, in this country, we never see it spread from person to person. But it is a prominent symptom in some epidemic visitations of continued fever, which undoubtedly is contagious. To this fact I am inclined to attribute the notion, formerly much more common than it now is, that simple dysentery is catching.

The remarkable decline of dysentery in this metropolis has been contemporary with that of other severe disorders; and is due to the same combination of causes. For nearly

two centuries we have had no *plague* among us. *Agues*, formerly very rife in London, have almost disappeared. *Continued fevers*, which used to break out annually in hot weather, are comparatively unfrequent. I believe that we may trace these great blessings to an event which was regarded, at the time, as a national judgment; I mean the great fire that, in 1666, consumed every thing between Temple Bar and the Tower. The streets and houses thus destroyed had been filthy in the extreme, close, densely crowded, and consequently most unhealthy. The impurity of the air excited, perhaps, some complaints; and it certainly predisposed those who dwelt in it to various kinds of disease, "the seeds of which (says Dr. Heberden) like those of vegetables, will only spring up and thrive when they fall upon a soil convenient for their growth." To the better construction of the houses and of the streets in the rebuilt city; to the increased means of ventilation; to the general formation of drains and sewers; to the more copious supply of water; and to the more temperate and cleanly habits of the people, we may fairly ascribe our present exemption from dysentery, from ague and continued fever, which are often the parents of dysentery, and from the plague itself. In many parts of this overgrown place there is still much room for improvement.

The pyrexia that accompanies dysentery sometimes begins before the local symptoms declare themselves; more frequently it succeeds their manifestation. Occasionally the fever runs high, the pulse is hard and frequent, the skin hot, the face flushed, and the tongue furred; and the patient complains of headache and thirst. But in this, as in other abdominal diseases, the pulse soon becomes small and weak, the strength rapidly declines, and the temperature of the body sinks.

In acute cases the pain is often severe; but it is subject to remissions and exacerbations. It occupies the hypogastrium, or some part of the course of the colon, where there is usually more or less tenderness on pressure. The patient is tormented by a sensation as if there was some excrement ready to be dislodged; goes perpetually to the night-chair, and is irresistibly impelled to strain violently to get rid of the irritation. But the efforts are ineffectual; he discharges but little; and what is voided is either altogether a jelly-like mucus (in which case the complaint has been called the *dysenteria alba*, and the *morbus mucosus*), or more commonly it is mucous and bloody (the *bloody flux* of our old authors), mixed with films and membranous shreds. In many of the dejections there is no genuine fecal matter at all; or the small indurated balls which I just now mentioned come away occasionally.

Frequently the ejected mucus is variegated in colour, green, or black, or reddish, like the washings of meat, and horribly foetid. Sometimes pain and difficulty in making water are added; there is *dysuria*, the irritation of the rectum being reflected upon the bladder through the lower portion of the spinal cord. Sometimes the stomach sympathizes, and nausea and vomiting ensue. With all this local suffering there is a continuance of febrile distress; the patient passes sleepless, or dreamy and disturbed nights, and is low-spirited and desponding. In the fatal cases the pulse becomes very small and rapid, the features sharpen, and the surface grows cold. Death begins at the heart.

Inspection of the dead body discloses more or less ulceration, chiefly of the large intestine. The glands that are scattered over its surface are enlarged and prominent, looking somewhat like small-pox pustules, for which indeed they have been mistaken. They probably form the foci of most of the ulcers, which are sometimes narrow and oblong, lying across the gut; sometimes very large and irregular, with here and there islands or ridges of thickened mucous membrane. In the worst cases the whole extent and circumference of the bowel presents one irregular, confused, and tattered mass of disorganization.

When submitted to early *treatment*, and when its exciting causes can be averted, or avoided, dysentery is not an intractable disorder. Sir James M'Grigor remarks of the camp dysentery in the Peninsula, that it had two stages, which it was of consequence to note, because they required different and almost opposite modes of treatment: the inflammatory stage, and the stage of ulceration. A plan proposed by Dr. Somers appeared to Sir James so judicious, and proved so successful, in the first attacks of the pure unmixed disease, that he recommended its general adoption in the army. It was this.

First, the patient was freely bled. Immediately afterwards twelve grains of Dover's powder were administered. This dose was repeated three times, at intervals of one hour. Plenty of warm barley-water was at the same time given, and profuse sweating encouraged for six or eight hours. A pill, containing three grains of calomel and one of opium, was exhibited every second night; and in the intervening day two drachms of Epsom salts dissolved in a quart of light broth. The venesection was repeated, while the strength and the pulse permitted it, until the stools were free or nearly free from blood; and Dover's powder, as a sudorific, was always given after the blood-letting. When the pains were great, and attended with much tenesmus, the warm bath gave instantaneous relief. "This plan being



steadily persevered in for a few days, the inflammatory diathesis of the intestinal canal, which had excited symptomatic fever throughout the general system, was found gradually to yield, and make way for returning health."

If the disease was not cut short by this method, but advanced into the second stage, and became chronic, the most effectual remedies appeared to be laxatives, and opiates, given alternately; and combined with such medicines as promote perspiration. The abdomen should be swathed with flannel, or covered by a warm adhesive plaster. Much benefit may be obtained from the employment of clysters, if there be not too much tenesmus to admit of the introduction of the pipe of the injecting syringe. Warm starch, with laudanum in it—not exceeding in quantity a couple of ounces, lest the irritable bowel should expel it again—will sometimes afford signal relief. Or if the pain and tenesmus are so great that a clyster-pipe cannot be used—or the enema is not retained—a grain or two of solid opium inserted into the rectum, beyond the sphincter ani, will often allay the distress. The food should be farinaceous and simple; and great care must be taken during the convalescence to prevent a return to improper diet, and a fresh exposure to cold.

There is one important point in the treatment of dysentery, concerning which a striking discrepancy of opinion exists, even amongst practitioners who have had large experience of the disease: I allude to the employment of mercury as a remedy. I have no data for settling the question: but the amount of evidence appears to be against its indiscriminate use. It seems (as we might expect) to be powerful both for good and for evil. Sir James M'Grigor has probably hit the distinction which should guide us to prescribe or to withhold this drug. It was, he tells us, when the dysentery was complicated with disease or disorder of the liver, that mercury proved so highly useful: when along with the dysenteric symptoms there were present a dull pain in the hepatic region, and in the right shoulder, a yellowish brown colour of the skin, and of the conjunctiva, and uneasiness when the patient lay in any other posture than on the right side. He adds: "In the early stage of the acute and unmixed disease, and before venesection has been performed, mercury will aggravate the symptoms. In the more advanced stage of the disease, particularly when there is hectic fever, with extensive erosion or ulceration of the intestine, it is invariably found to hurry it on to a fatal termination."

The sporadic dysentery which we chiefly see in this country seldom requires the lancet. Leeches, however, are to be applied, in the track of the colon, wherever there is much

tenderness on pressure. A full dose of castor oil may then be given; and after that an opiate. It is the practice of some physicians to prescribe laxatives and opium together; but in this complaint it is better to alternate them. Opiate enemata are of service for relieving tenesmus. These remedies will be much assisted by the warm bath; by hot fomentations to the abdomen; and by such means as promote the natural secretions of the skin. If there be any reason to suspect that the portal system is gorged with blood, complete relief to the dysenteric symptoms may often be obtained by the practice which I recommended as proper in melœna; viz. the exhibition of five grains of calomel at bed-time, and of a senna draught the next morning, for two or three days in succession. Should the symptoms still drag on, it may be necessary to give mercury, even to the extent of making the gums tender; but it should be introduced gradually. Equal parts of *hydrargyrum cum creta* and of *Dover's powder*, constitute a very good combination either in pill or powder for such forms of the complaint. But in the milder cases of simple sporadic dysentery there is no occasion, I had almost said there is no excuse, for giving your patient a sore mouth by the lavish employment of mercurial remedies.

The fluxes of which I have hitherto spoken have all consisted in an immoderate discharge of some of the usual contents or secretions of the alimentary tube, in an altered and unnatural state. But matters are sometimes voided from the bowels totally unlike any of the healthy discharges. *Adeps* is not an intestinal excretion; yet it is sometimes passed, in great abundance, by stool. Many unquestionable instances of this are on record, both in ancient and in modern literature. Though I have never met with one, and therefore have but little to say on the subject, I must not pass it over altogether. A certain quantity, sometimes it has been a large quantity, of oil, of liquid fat, has been poured forth, in a sort of diarrhoea. Sauvages was aware of this disorder, and calls it, in his Nosology, *diarrhœa adiposa*. In a paper in the *Medico-Chirurgical Transactions* upon this subject, Dr. Elliotson refers to an example of it described by Tulpius, in which a woman discharged every day for fourteen months a considerable quantity of yellow fat, that lay upon the fœces like melted butter. When voided into a vessel of water it floated, like oil, upon the surface; and when cold it assumed the consistence and appearance of fat. Like fat, it was very inflammable, and burned with a bright flame. With all this there was no kind of distress, nor any wasting of the body: and the patient was in excellent health sixteen years afterwards. Dr.

Elliotson had a case of this kind under his own care. The man had also diabetes and phthisis. The symptoms were precisely the same as those described by Tulp. Dr. Prout and Dr. Faraday analyzed portions of the adipous matter, and they pronounced it to be genuine fat. Mr. Lloyd, of St. Bartholomew's Hospital, has given us the details of a case in which the evacuation of grease was associated with jaundice. The excretion looked like melted fat, but when cool had the consistence of butter. It swam on the surface of water, melted at a moderate heat, and burned readily. In this instance the head of the pancreas, and the duodenum, were involved in a mass of scirrhus disease. And this is a very curious fact: for Dr. Bright also states that in three different persons, each of whom he had known to pass fat from the bowels during life, and whose bodies he had had the opportunity of examining after death, he found scirrhus disease of the pancreas, and fungous disorganization of the duodenum.

The remarkable coincidence occurring so often of these fatty discharges with cancerous disease of the pancreas and duodenum, is well worthy of being borne in mind; although it may not, as yet, afford any explanation of the phenomenon.

All that we know of the disease seems to amount to this: that it is not a *common* complaint; and that it is not necessarily a *fatal* complaint: for persons who have passed great quantities of fat in that way have lived in good health for many years afterwards. Yet though not *necessarily* fatal, it has frequently been found associated with incurable malignant disease in the duodenum and pancreas. Dr. Prout also informs us that in cases in which a similar oily fluid has been passed through the *urethra*, the *kidneys* have been found in a state of organic malignant disease.

With respect to the treatment of such cases, all the hints I can give you are such as are furnished by the two following facts:—

Mr. Howship, in his book on morbid anatomy, mentions the instance of a lady who was affected with this diarrhoea adiposa, and parted with vast quantities of fat; and who was cured upon the principle of *similia similibus curantur*, for she recovered after swallowing a pint of sweet oil. And Dr. Elliotson, acting on this hint, gave *his* patient, who was labouring at the same time under diabetes, a quarter of a pint of olive oil; and the voiding of fat greatly diminished from that time, and soon ceased entirely.

Whether these were really cures, or whether they were coincidences, is a question which we want larger experience to help us to determine.

When I was speaking of the causes of enteritis, I adverted to the presence of *foreign substances*, as they are called, in the bowels, and to *intestinal concretions*.

There are some points connected with these subjects which I had not then leisure to mention, but which you ought not to be ignorant of.

Intestinal concretions are very common in some of the lower animals—in horses and oxen especially. Most of you have seen, I dare say, immense intestinal calculi of this kind, and great numbers of them, in the museum of the College of Surgeons. The old remedies called *bezoars* were of the same nature.

They occur also, these intestinal calculi, in the human entrails, and in various parts of them; chiefly, however, in the cæcum and large intestines, but sometimes in the stomach: indeed, very large ones have occasionally been met with in the latter organ. Bonetus describes one which weighed nine ounces, and was as big as a hen's egg. Generally they are few in number in the same person; one only, perhaps, exists, or two or three. Yet as many as thirty have been found together in the stomach in one case; and in another case nine. One of the Monros of Edinburgh (Monro primus) detected twelve in the colon of a boy, during life, by the touch. Monro secundus took a concretion that weighed four pounds from the colon of a woman. They have been known to measure as much as eight inches in circumference. In the 24th volume of the *Edinburgh Medical and Surgical Journal* is an account of one long one, or, perhaps, of three that had become united together, weighing twelve ounces. Mr. Turner, of Keith, has very lately published the case of a man who passed fourteen large intestinal concretions.

Now what are these substances, and how do they get there? What is the pathology of the malady? Why, they seem to be formed, in many instances, by the deposit of saline particles, intermixed with animal matter, upon and around some accidental nucleus which has entered the alimentary canal, and stopped there. Sometimes a gall-stone forms the nucleus: the centre of the calculus has several times been found to consist of pure cholesterine. Those matters over which the gastric juice has no power, and which pass the pylorus unchanged—such as the stones of fruit, husks of grain, many unbroken seeds, portions of bone, and the like. Other of these intestinal concretions are evidently composed of a mass of short fibres, matted, or interwoven together, after the manner of *felt*. These calculi have a somewhat soft and velvety feel, yet are too hard to be much compressed. Sometimes they involve a nucleus, and

sometimes they do not. Their composition has been discovered in rather a curious manner. Mr. Clift, who, as you know, has long had the main charge of the Hunterian Museum, after attentively examining some of the specimens there collected, fancied that they might be formed somehow of the beards of oats; and the late Dr. Wollaston, at Mr. Clift's suggestion I believe, undertook to analyze them somewhat more rigidly; and he found that Mr. Clift's conjecture was well founded. If you have ever looked closely into the structure of an oat, which has been separated from its husk, you may have noticed that one end of it is formed somewhat like a tiny brush; made up of very minute needles or beards. Dr. Wollaston found that these ends were identical in their shape and composition with the fibres of the intestinal concretions.

The accuracy of the result of this analysis is singularly confirmed by the fact that this particular kind of intestinal calculus is almost peculiar to the bowels of Scotch people; among whom, as you know, oats form a very common article of diet, in the shape of *oatmeal*.

Concretions of the same species have also been found in the intestines of Lancashire persons; and they also use oatmeal a good deal as food. Mr. Children gives an account of some in the Philosophical Transactions for 1822. The fibres were cemented together by mucus; and the concretions contained also albumen, phosphate of lime and soda, and common salt.

I mentioned formerly the danger which attends the incautious or excessive use of magnesia, whether for stomach complaints or for urinary disorders. When this substance is taken habitually, or when due care is not taken to ensure its habitual expulsion from the intestines, it is liable to accumulate and concrete there, especially in the cæcum and colon. Large masses of this kind have been met with, composed almost entirely of carbonate of magnesia.

And the habitual use of any other indigestible substance may have the same ill consequence. The seeds of figs; unbruised mustard seeds, which (as I mentioned before) are taken daily by some persons; the woody knots found in certain pears; all these have been known to form the material of concretions, or of hard injurious masses in the bowels.

Now concretions of this kind come at length to produce symptoms by the pressure and distension they occasion, by the ulceration to which they sometimes give rise, and, above all, by the obstacle they oppose to the passage of the contents of the intestines. They generally cut the patient off by giving rise to inflammation.

But they may exist for a long time with-

out producing any definite symptoms. And when symptoms do arise, or when we ascertain that such concretions have formed, we are often at a loss for a remedy. From the *colon* we may hope at last to dislodge them: by mechanical means when they are near the outlet; by frequent injections of warm water, or soap and water, by which they may be softened or broken down, and washed out, when they are beyond the reach of the finger, or of instruments passed into the rectum.

We have an illustration of the patience of the alimentary canal under the presence of these masses, in what often happens when foreign bodies of some magnitude are swallowed and remain in the tube.

In one of the earlier volumes of the *Medico-Chirurgical Transactions* you may read the history of a celebrated knife-eater. A sailor, in a drunken bravado, swallowed a clasp-knife. This was followed by no immediate bad consequences, and he used to brag of the feat he had performed. And afterwards, either to satisfy the scruples of those who did not believe his assertions, or for the sake of rewards which some people were thoughtless and cruel enough to offer, or to win wagers, he stupidly repeated his folly, till he had swallowed (I think) thirteen knives of various kinds and sizes. They killed him at last; and their remains were found in various parts of the alimentary tract. But he had no serious symptoms for some time.

Mr. Wakefield has given us an account of a culprit, confined in the Cold Bath Fields Prison, who had swallowed seven half-crowns before his incarceration. One day out they all clattered into the pan of his night-chair.

I saw a prisoner myself, last autumn, in the Penitentiary, who, after some sickness, and tenderness of the belly, voided a half-crown from the rectum. This was in November, 1839. He had swallowed the piece of money two years and a half before—viz. in March, 1837; and, until within a week of his passing it, he had enjoyed excellent health.

Before I proceed to any of the other viscera of the abdomen, I may as well take such notice as the nature and limits of these lectures admit and require of the subject of *worms*: in which subject the intestinal canal is more concerned than any other part of the body. It seems a strange, as it is a somewhat humiliating fact, that the human body should furnish food and a habitation for many of the inferior creatures; not only after death, but while it is yet alive. The parasitic animals which thus prey upon man have been much studied from time to time, and especially of late, in their relations to natural history: and some of the facts that have been ascertained respecting them you

ought to be acquainted with. But I shall pursue the subject no farther in this place than it concerns us as pathologists and physicians. Its natural history will, no doubt, be fully taught you by the professor of comparative anatomy.

First, then, it is a notorious fact that numerous parasites do crawl over our surface, burrow beneath our skin, nestle in our entrails, and riot, and propagate their kind, in every corner of our frame: producing oftentimes such molestation and disturbance as require the interference of medicine. Nearly a score of animals belonging to the interior of the human body have been already discovered and described: and scarcely a tissue or an organ but is occasionally profaned by their inroads. Each, also, has its special or its favourite domicile. One species of *strongyle* chooses the heart for its dwelling-place, another inhabits the arteries, a third the kidney. Myriads of minute worms lie coiled up in the voluntary muscles, or in the cellular tissue that connects the muscular fibres. The *guinea-worm* and the *chigoe* bore through the skin, and reside in the subjacent reticular membrane. *Hydatids* infest various parts of the body, but especially the liver and the brain. A little *fluke*, in general appearance much like a miniature flounder, lives, steeped in gall, in the biliary vessels. Even the eye has its living inmates. But it is, I repeat, in the alimentary tube that we are most apt to be plagued with these vermin.

Independently of minute scientific divisions into genera and species, there are some broad lines of distinction between these creatures. Thus some kinds of worms occupy, as I have said, the interior of our bodies; these are called accordingly *entozoa*: some dwell externally, and are named *ectozoa*.

There are five sorts of intestinal worms, sufficiently common to make it likely that you will meet with some or most of them in your future practice. I shall, on that account, direct your attention first of all to them.

1. A frequent tenant of the human intestines is the round worm, so like in shape, size, and general appearance to the common earth-worm. It is from this species, no doubt, that the whole class are called *worms*. This round worm is often denominated a *lumbricus*; but that is erroneous: it is a species of *ascaris*, and it has been named by naturalists the *ascaris lumbricoides*—the *ascaris* that is like a *lumbricus*.

2. The *ascaris vermicularis*; or the *aryuris vermicularis*. These animals resemble slender maggots rather than worms. They are often called simply *ascarides*: or, in the vernacular, *thread-worms*: and they are very much like bits of white thread.

3. The *tricocephalus dispar*; also a small

worm, but longer than the last; its vulgar denomination is accordingly the *long thread-worm*.

4 and 5. Two species of *tania*; long, flat, articulated animals, resembling pieces of tape. The *tania solium*, or common tape-worm of this country; and the *tania lata*, or broad tape-worm.

Of all these I proceed to mention a few more particulars.

The *ascaris lumbricoides*, or round worm, is, I say, very like the common earth-worm, and used to be thought identical with it. It runs from five or six inches to about a foot in length, and it is of a reddish-brown colour, with a tinge of yellow. The female worm (for they are of both sexes) is much more common than the male, which is smaller also, and may be distinguished by a curved state of its tail, and by the genital organs. Sometimes young ones are met with, about an inch and a half long.

I shall not go into any minute description of the anatomy of these worms. You cannot mistake them, except for earth-worms; and the points of distinction between the two, when known, are easily perceived. The earth-worm, then, is redder than the intestinal worm, and less pointed at its two ends. The mouths of the two differ much; that of the earth-worm is a short longitudinal fissure, or slit, placed on the under surface of its small rounded head. In the *ascaris lumbricoides*, the mouth is situated at the extremity of the worm, is of triangular shape, and is surrounded by three tubercles.

It is curious that similar differences, only reversed, exist in respect to the other aperture of the alimentary canal, the anus. In the earth-worm this is terminal, at the very end of the cylinder: in the *ascaris* it is a transverse slit *near* the extremity, and on the under surface of the animal.

Again, the earth-worm has rows of little projections, like bristles, upon its under surface; feet they may be called, for they appear to serve the purposes of locomotion. In the parasite there is nothing resembling this.

By attending to these plain marks, you may avoid being deceived by impostors, who pretend that they are afflicted with worms, and to prove their case bring you an earth-worm or two in a bottle.

The *habitat* of these worms is in the small intestines. They may, and do, pass upwards into the stomach, or downwards into the large bowel: in either case they are generally soon voided. Sometimes they are vomited up: but they have been known to creep into the oesophagus, and thence into the nostrils. Andral states that he saw a case in which a child was strangled by one of these worms, which had turned back and become entangled



in the larynx. They have been found also in the excretory ducts of the liver. This Andral has witnessed; as has also Dr. Baron in this country.

It was formerly thought that these animals were capable of perforating the coats of the intestine: but that opinion is now generally exploded. They do not appear to have the means, if they possess the inclination, to bore through. What gave rise to this notion was the circumstance of their sometimes passing out of the bowel, through ulcerated or other openings, into the peritoneal sac; or into the vagina or bladder; or outwards through hernial apertures.

The number of these worms existing at the same time in the same person is very variable. The late Dr. Hooper mentions a child, eight years old, a girl, who voided upwards of 200 in the course of one week. An instance is recorded of a soldier who passed 367 in six days. Another patient got rid of 460 in a fortnight.

Fifty or sixty have been found in the same dead body. They often lie in packets. The corresponding portion of mucous membrane has in some cases been red, in others quite natural. Sometimes two are met with; sometimes one only. So that we cannot infer with certainty that because one such worm has been voided, more remain behind; although that is always probable.

This worm is more common in the early periods of life than afterwards.

The other species of ascaris, the *ascaris vermicularis* or thread-worm, resembles the former in some respects, but differs from it remarkably in size. Here also the female is longer and larger than the male; the one being perhaps half an inch in length, the other not two lines, and very slender.

The thread-worms live principally in the rectum, and sometimes exist there in vast numbers; thousands: and they pass out, or are ejected, matted together with mucus, in the shape of balls, or entangled in portions of excrement. Sometimes they emerge of their own accord, and crawl about the neighbourhood, getting into the vagina in females, and even into the urethra, and causing intolerable irritation, itching, and distress.

They are seen, when recently expelled, to be very lively; moving their anterior extremity about continually. From this restlessness and activity the name of ascaris is said to be derived—from the Greek word *ασκαρίζειν*, to leap.

This worm also belongs chiefly to infancy and childhood. It does sometimes infest adults; but generally as the patient grows older the animals cease to trouble him, whether curative means are employed or not. Bremser, however, knew a person 80 years old, who was nearly killed by them.

The third kind of these round worms is the *long thread worm*; the *tricocephalus dispar*. It is from an inch and a half to two inches long. One extremity, that to which the head belongs, is extremely fine and small; and then suddenly bulges out into a thicker body. The thinner portion is about twice as long as the thicker. Its name is derived from this variation of size. *τριξ*, a hair, and *κεφαλη*, the head; the portion to which the head is appended being as fine as a hair. At one time the head was mistaken for the tail, and then the animal was called *tricusis*, from *τριξ*, and *ουρα*, the tail. The thicker or body part is rolled up in a spiral form, especially in the male, the female being straighter. This worm is of a white colour, unless tinged by its food. It also affects the large intestine as its place of abode; but the opposite end of that gut, the cæcum, is its favourite spot. It is sometimes met with in great numbers, attached to the mucous membrane by its head; the body hanging loose.

Although generally overlooked, it is said to be extremely common, and to occur in most bodies. I have seldom seen it; but then I have never hunted for it. It infests the dog, the fox, the monkey, and other mammiferæ.

This species of entozoon attracted a good deal of attention about 70 or 80 years ago; it being then first observed in Germany during the prevalence of an epidemic fever, which was characterized by profuse mucous diarrhoea. Roederer and Wagler have given an excellent account of this disorder, under the title of *morbis mucosus*. It was thought to have been excited by these worms, which were found in abundance in the cæcum after death. This opinion must have been erroneous, for the animals were known, in other places, long before; and they produce, in general, no inconvenience.

The two *tæniæ* are more formidable beasts. With a general resemblance between them, there are strong particular distinctions.

The *tænia solium*, or common tape-worm, has a minute hemispherical head, and a long flat body, of a whitish colour, composed of many pieces curiously articulated together. The articulated pieces are quadrilateral, very short and small in the creature's neck; become gradually square as the distance from its head increases; and at length are longitudinally oblong. These portions, or *joints* as they are called, have foramina on their margins, leading to ovaries within. The foramina, which are very conspicuous, are placed alternately on the one side of the animal and on the other: on the right edge of one joint, on the left of that next to it. This arrangement is, however, subject to occasional irregularities. Each joint is let



in, as it were, to that immediately in front of it; and the connection between them is not very firm. It is less firm in proportion as the animal is older, and as we approach its posterior extremity: so that the segments are apt to come away, by stool, separately. They have somewhat the appearance of the seeds of cucumbers or gourds; and the parasites, for that reason, are sometimes called *cucurbitine* worms. Blumenbach and others have supposed that each articulated piece was a distinct worm: but that is not the case. The head of the animal, and its peculiar terminal segment, forbid this belief.

The common tapeworm is very narrow and thin towards its anterior extremity; one-third or one-quarter of a line perhaps in breadth. At its broadest part it may be from three to six lines wide.

The young *tæniæ* seem to be merely wrinkled; but they are really articulated. The question has been started, whether the lost joints are ever reproduced. It is believed that no new joints are formed, but that the original ones are gradually more and more developed. The animal is androgynous and hermaphrodite.

Specimens of this worm are preserved, upwards of 20 feet in length. Much exaggeration seems to have existed formerly about its size. It has been said to measure 150, and even 300 feet. In all probability separate portions of several have been estimated as forming parts of one and the same worm. There is one case well authenticated (it is cited by Bremser from Robin) in which a tapeworm was found to extend from the pylorus to within seven inches of the anus; adhering firmly to the mucous membrane all the way. The animal has the power of motion. Its movements are felt by the patients, within them; when recently expelled, and placed in tepid water, it may be seen to shorten itself; nay, portions protruding many feet from the anus have been known to draw themselves back again.

This kind of worm is more frequent in adults than in children: yet it is sometimes met with even in the foetus. It is exceedingly common in dogs. It has been badly named *ver solitaire*, for it is not always single. It is not only found in company with different worms, but also with others of its own species. Its natural place of abode is the small intestines: but it extends sometimes into the large, and sometimes into the stomach. Vandoverer declares that after an emetic one of his patients vomited forty Dutch ells of the worm, and might have got rid of more "if he had not been afraid of puking out all his guts, and for that reason bit the worm off."

The *tænia lata*, or broad tapeworm, has often been confounded with the *tænia solium*; yet there are striking differences between them; respecting which, for all prac-

tical purposes, it is enough to say that the heads (as viewed through a microscope) are very dissimilar; that the joints of the *tænia lata* are shorter and broader, and adhere together in a different manner; and that the pores leading to the oviducts are situated not on the edge of each joint, but in the centre of its flat surface. This variety is not so easily broken across as the former; and therefore its segments are less liable to be voided in a separate form. It is probably shorter also than the *tænia solium*. Fifteen feet has been supposed its average length. Marvellous stories, however, are told on this head. Boerhaave declares that he effected the expulsion of one, which was 300 ells long, from the bowels of a Russian.

The geographical distribution of these two species of *tænia* forms a curious part of their history, and throws some light upon the doubtful question of their origin. In England, Holland, and Germany, the *tænia solium* is common, and the *tænia lata* very rare. In Russia, Poland, and Switzerland, it is just the reverse: the *tænia lata* prevails; the *tænia solium* is seldom seen: while in France one species is nearly as frequent as the other.

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#### ON THE VITAL PROCESSES AND THE IN- FLUENCE OF THE ATMOSPHERE UPON ANIMALS.

BY PROFESSOR LIEBIG.

[Translated from the "Annalen der Chemie und Pharmacie."]

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THE absorption of food and oxygen are the primary conditions necessary for the support of life. In each moment of time during life we take in oxygen by the organs of respiration. No intermission is to be observed so long as the animal lives. The discoveries of physiology show that the body of a man who is grown up with sufficient nourishment, after twenty-four hours neither increases nor diminishes in weight; yet the quantity of oxygen which is absorbed during this time is very considerable. According to Lavoisier's experiments, a grown man in one year absorbs from the atmosphere 746 lbs. of oxygen gas; according to Menzies 837 lbs.; and yet we find the weight of the body at the commencement and end of the year quite unaltered, or the increase or diminution varies only a few pounds. One may ask where is this immense

quantity of oxygen gone to which an individual in the course of one year absorbs. This question can be answered with perfect certainty. No part of the absorbed oxygen remains in the body, but it again goes out combined either with carbon or hydrogen. The carbon or hydrogen of certain components of the animal body combine with the oxygen absorbed by the skin and lungs, and they are separated in the form of carbonic acid and the vapour of water. With each respiration during each moment of life, certain parts of the animal body separate themselves from it, after they have entered whilst in the body itself into combination with the oxygen of the atmospheric air. If, in order to have some data for our calculations, we assume with Lavoisier and Seguin, that a grown up-man daily absorbs  $32\frac{1}{2}$  ounces of oxygen ( $46037$  cubic inches  $= 15661$  grammes), and we assume the mass of blood to be  $24$  lbs., containing  $80$  percent. water, then it follows from the known composition of the blood that, in order perfectly to change the carbon and hydrogen of it into carbonic acid and water,  $66040$  grammes of oxygen are required, which would be taken into the body of a grown man in four days and five hours. It matters not whether the oxygen goes to the components of the blood, or to other matters which are rich in carbon and hydrogen in the body. It cannot hinder the conclusion, that in the body of a man in four days and five hours so much carbon and hydrogen must be again added by way of nourishment as is sufficient to provide  $24$  lbs. of blood with these constituents. We first assume that the weight of the body does not change, that it shall keep its normal condition. This supply comes from the food. A grown man, in a state of moderate exercise, consumes daily  $18.9$  ounces of carbon. This follows from an accurate determination of the quantity of carbon, which by means of the food is absorbed into the body, and also by the separation of that quantity which is got rid of by the fæces and urine unburnt, or, if one may so express it, in some other form than in that of an oxygen compound. The numbers here stated are the average consumption of  $856$  billeted soldiers. These  $18.9$  ounces of carbon escape by the skin and lungs in the form of carbonic acid gas.  $37$  ounces of oxygen are required to change these

$18.9$  ounces of carbon into carbonic acid gas. According to the analytic results obtained by Boussingault (*Annales de Chim. et de Phys.*, lxx. s. l. p. 136), a horse consumes in  $24$  hours  $79\frac{1}{2}$  ounces of carbon. A cow which is giving milk,  $70\frac{1}{2}$  ounces. The quantities of carbon here mentioned are separated as carbonic acid. The horse has used in  $24$  hours  $13\frac{1}{2}$  lbs. of oxygen for the conversion of the carbon into carbonic acid, and the cow  $11\frac{1}{2}$  lbs.

It is clear that the quantity of nourishment which the animal body requires for its support is in exact relation to the oxygen absorbed, because no part of the oxygen which is absorbed goes out again from the body, excepting in the form of a carbon or hydrogen compound; and further, because, in a normal state of health, the carbon and hydrogen which go out are again replaced by carbon and hydrogen, which are supplied by the food. Two animals, which absorb unequal quantities of oxygen in equal times, by means of the skin and lungs, consume, in a similar ratio, an unequal weight of the same food. In equal times, the quantity of oxygen used may be expressed by the number of respirations. It is clear that the quantity of food to be eaten varies, in the same animal, according to the strength and number of the respirations. A child whose organs of respiration are in greater activity than those of one who is grown up, must take more frequently, and proportionably more nourishment. It can less easily endure hunger: a bird dies from want of food on the third day; a snake which, during an hour's breathing under a glass case, scarcely uses so much oxygen that the carbonic acid produced therefrom can be observed, can live three months or longer without food. In a state of rest, the number of respirations amounts to less than in a state of exercise and work. The quantity of nourishment necessary in these states must be in the same proportion: an excess of nourishment and a want of inspired oxygen (that is, of exertion), and also strong exercise (which necessitates a greater measure of nourishment) and feeble organs of digestion, are incompatible with each other. The quantity of oxygen which an animal inspires is not alone dependent on the number of the respirations, but also on the temperature of the inspired air.

The cavity of the chest of an animal has an invariable size; with each inspiration a certain quantity of air enters, which, as regards volume, may be looked upon as constant; but its weight, and the weight of the oxygen which is absorbed in it, does not remain constant. In the warmth the air expands, and in the cold it contracts: in an equal volume of air, which is colder or warmer, we have an unequal weight of oxygen. If a grown-up man inspires 46,037 cubic inches of oxygen, at a temperature of  $25^{\circ}$ , the weight of this amounts to  $32\frac{1}{2}$  ounces. If the same volume of oxygen is inspired at a temperature of  $0^{\circ}$ , 35 ounces are absorbed in the same time. In summer and winter, at the Poles and Equator, we inspire an equal volume of air: and if we, in summer, absorb  $31\frac{1}{2}$  ounces, then at a temperature of  $0^{\circ}$  (the number of respirations being the same), the quantity of absorbed oxygen amounts to 35 ounces. In Sicily, at a temperature of  $35^{\circ}$ , to  $28\frac{1}{2}$  ounces; at a temperature of  $10^{\circ}$ , to 36 ounces. The oxygen gas taken up goes out again both in summer and winter, altered in the same way. We expire more carbon at low temperatures than at higher ones, and we must consume more or less carbon in food in the same proportion; in Sweden, more than in Sicily; near Giessen, in winter, an entire eighth part more than in summer. Even when we consume an equal quantity of food (as regards weight) in cold and warm places, a never-failing wisdom has ordered that this food should differ, to the greatest extent, in the carbon it contains. The fruits which the southern eats, contain, when fresh, not more than 12 per cent. of carbon; whilst the fat and train oil of those near the poles contain from 66 to 80 per cent. It is not difficult to live moderately in hot countries, or to endure hunger at the equator; but cold and hunger produce a more rapid consumption of the body.

The changes taking place in the constituents of the food, by means of the oxygen distributed through the body by the circulation, are the source of animal heat: all living things, whose existence depends on an absorption of oxygen, possess a source of warmth independent of the surrounding atmosphere. This truth is established in all animals, and extends to the germinating seed, the bloom of plants, and

the ripening fruit. Warmth is only produced in those parts of animals to which arterial blood, and thereby the oxygen absorbed in respiration, can reach: hair, wool, feathers, possess no temperature which is peculiar to them. This increase in temperature of the animal body, or, if we so express it, production of warmth, is, throughout all things, and under all circumstances, a consequence of the combination of a combustible material with oxygen. In whatever form, also, the carbon may combine with the oxygen, the act of combination cannot proceed without being accompanied by the development of warmth; it makes no difference whether it ensues slowly or quickly, whether it proceeds at a high temperature or a low one; the quantity of warmth which is set free is always unaltered: the carbon of the food, which is changed into carbonic acid in the body, must produce just as much warmth as if it were burnt directly in oxygen or in the air; the only difference is, that the quantity of warmth produced is distributed in unequal times. In pure oxygen the combustion goes on quicker, and the temperature is higher; in the air the combustion is slower, the temperature is lower, but it continues longer. It is clear that the number of degrees of warmth which are set free must increase or diminish with the quantity of oxygen supplied by the process of respiration in equal times; animals which breathe strongly and quick, and therefore consume much oxygen, possess a higher temperature than others who, in an equal time and equal volume, absorb less for the warming of their bodies. A child has a temperature of  $39^{\circ}$  C.; a grown-up man,  $37.5^{\circ}$ ; a bird has a higher temperature ( $40^{\circ}$ - $41^{\circ}$  C.) than a four-footed beast ( $37^{\circ}$ - $38^{\circ}$ ), or a fish or amphibious animal, whose proper temperature is  $1\frac{1}{2}$  or  $2^{\circ}$  above their surrounding medium. All animals are warm-blooded; but only in those which breathe by lungs is the proper temperature entirely independent of the temperature of the surrounding medium. The most certain observations show that, in all climates, in the most temperate zones, as well as at the equator or at the poles, the temperature of man, and of other so-called warm-blooded animals, never changes; yet how different are the conditions of life in

which they live. The animal body is a heated body, which behaves to its surrounding medium like all heated bodies: it receives warmth when the external temperature is higher, it gives warmth when it is lower than its own proper temperature. We know that the rapidity of cooling in a warm body increases with the difference of its own proper temperature, and of the medium in which it is placed; that is, the colder the surrounding medium is, in so much the shorter time the warm body becomes cold. But how different is the loss of heat which a man suffers in Palermo, where the external temperature is near that of the body, and the loss of a man who lives at the Pole, where the temperature is  $40^{\circ}$ - $50^{\circ}$  lower. But experiment shows, notwithstanding this exceedingly unequal loss of warmth, that the blood of those at the north pole possesses no lower temperature than of those in the south of Europe, who live in so different a medium. These facts, taken in their true meaning, show that the heat lost is as quickly renewed in the animal body; in winter this renewal ensues quicker than in summer; at the poles quicker than at the equator. Now, in different climates, the quantity of oxygen which goes into the body by respiration varies with the temperature of the external air: the quantity of inspired oxygen increases with the loss of warmth, from cooling; the quantity of carbon or hydrogen necessary for combining with this oxygen must increase in a similar proportion. It is clear that the compensation of warmth is effected by means of the changes in the component principles of the food, which combine with the inspired oxygen. Employing a common-place, but not the less accurate comparison, the animal body, thus viewed, acts as a fire furnished with fuel: it matters not what forms the food gradually assumes in the body, what changes, also, it may undergo; the ultimate changes which it experiences are the change of its carbon into carbonic acid, and of its hydrogen into water: the nitrogen and unoxidized carbon are separated in the urine and the solid excrements. In order to have a proper temperature from the fire, we must put on quantities of fuel varying as the external temperature. As regards the animal body, the food is the fuel; by means of its oxydation, effected by proper admission of oxygen,

we obtain the warmth which is liberated. By exercise in cold air, during winter, the quantity of inspired oxygen is increased. The necessity for nourishment rich in carbon and hydrogen is also increased in the same proportion; and in satisfying this necessity, we obtain the most effectual protection against the severest cold. He who hungers is cold; and every one knows that the beast of prey of the northern climates far exceeds in voraciousness that of the southern.

In the cold and temperate zones, the air, which unceasingly endeavours to consume the body, forces us to work and exertion to procure the means of counteracting this inward consumption; whilst, in warm climates, the demands for the procuring of food are by no means so urgent. Our clothes are but equivalents for our food. The warmer we clothe ourselves, the more we lessen the necessity for eating; because the loss of warmth, the cooling, and therewith the compensation to be effected by food, is lessened. If we went naked, as the Indians, or were exposed to cold in the North by hunting or fishing, we should be able to devour half a calf, and afterwards more than a dozen tallow candles, as warm-clothed travellers with astonishment have told us. We should be able to consume the same quantity of spirit, or of oil, without injury; because the carbon and hydrogen which they contain serves to counterbalance the external temperature. The quantity of food necessary to be eaten, according to the foregoing principles, should be adapted to the number of respirations, the temperature of the inspired air, and to the quantity of heat which we give out. No isolated opposing facts can change the truth of this law of nature. The Neapolitan cannot consume more carbon and hydrogen in his food than he expires; and no inhabitant of the North can expire more carbon or hydrogen than he has consumed in his food, without inflicting a transitory or permanent injury on his health, except he be in a state of disease or of hunger; conditions we will somewhat nearer consider. The Englishman finds with regret his appetite, which gives him often-returning enjoyment, failing in Jamaica, and he succeeds, in fact, by means of Cayenne pepper and the strongest stimulants, in taking the same



quantity of food as in his native country; but the carbon of this food which goes into the body is not consumed. The temperature of the air is too high, and a relaxing heat allows of no increase of the number of respirations (by means of exercise and exertion) to proportion the consumption of the body to that which has been eaten. Those patients in England whose diseased organs of digestion lose wholly or partially the power of changing the food into that state in which it is best fitted to combine with oxygen, by way of counteraction are sent to southern countries, where the quantity of inspired oxygen is lessened in so great a degree, and an improvement in health is most evident. The unhealthy organs of digestion have power enough to proportion the small quantity of food they are able to take to the lessened quantity of oxygen which is absorbed. In colder climates the oxygen acts even on the lungs themselves. In summer, among us, in Germany, liver diseases (carbon diseases) are most prevalent. In winter, diseases of the lungs (oxygen diseases). The cooling down of the body, from whatever cause it occurs, necessitates a greater measure of food. Simply remaining in the open air, whether in a coach or on the deck of a ship, increases, by radiation and evaporation, the loss of warmth: even without any exercise we are constrained to eat more than usual. The same is true of persons who are accustomed to drink large quantities of cold water, which passes off again at a temperature of  $37^{\circ}\text{C}$ . It increases the appetite; and feeble constitutions must, by persevering exercise, take into the body oxygen sufficient to compensate for the warmth which is lost. Strong and continued speaking and singing, the crying of children, moist air, all these exercise a determinate recognizable influence on the quantity of food necessary to be eaten. In the preceding remarks, it has been assumed that it is especially the carbon and hydrogen which serve to combine with oxygen, and to produce the animal heat. The simplest observations shew, in fact, that the hydrogen of the food plays a no less important part than the carbon.

The whole process of respiration appears in most perfect clearness when we consider the state of a man or animal kept from all food. The mo-

tions of respiration remain unaltered. Then, as well as previously, oxygen is absorbed, and carbonic acid and vapour of water expired. We know, with indubitable certainty, whence the carbon and hydrogen originate; for with the continuation of the fast, we see the carbon and hydrogen of the body lessening. The first action of hunger is to cause an absorption of fat. This fat is neither to be recognized in the scanty fæces nor in the urine. Its carbon and hydrogen are passed off by the skin and lungs in the form of compounds of oxygen. It is evident that these components of it have served for the purposes of respiration. Each day  $32\frac{1}{2}$  ounces of oxygen enter the body, and these going out, remove a part of the body of him who starves. (Currie saw a patient who could not swallow, lose 100 pounds in weight in a month; and a fat pig, which fell over a precipice, lived 160 days without food, and lost above 120 pounds in weight.—*Transactions of the Linnean Society*, vol. xi. p. 411). The state of the dormouse, and also the periodic accumulation in other beasts, of fat, which, at other periods of their lives, disappear without leaving a trace, all these well-known facts make it certain that the oxygen, in the process of respiration, makes no selection among the substances which are fitted to combine with it. The oxygen combines with all that is presented to it; and want of hydrogen is the only reason why it generally forms carbonic acid: for, at the temperature of the body, the attraction of hydrogen for oxygen far exceeds that of carbon for oxygen. In fact, we know that a graminivorous animal expires a volume of carbonic acid equal to that of the oxygen it inspires; while, by carnivorous animals, which are the only class which eat fat in their food, more oxygen is inhaled than answers to the volume of carbonic acid which is expired. It has been shewn by accurate experiments that, in many cases, carbonic acid is only expired equal to half the volume of oxygen. These observations are capable of no refutation. They are more convincing than all the artificial phenomena called forth at will, which we name experiments—experiments which are quite unnecessary, and destitute of all weight, if the opportunity for observation presents itself naturally, and this opportunity



is skilfully employed: in those starving not only the fat, but, by degrees, all the solid matters capable of solution, disappear. In the wasted body of one who starves, the muscles become thin and soft; the power of contraction is lost; all the portions of the body which possess a power of passing into a state of motion (by being redissolved) have served to protect the rest of the structures from the all-destroying action of the atmosphere. In the end, the component parts of the brain take part in the process of oxydation; then follows wandering, delirium, and death. That is, all opposition ceases. The chemical process of decay begins; all parts of the body combining with the oxygen of the air. The time in which one who starves dies, is determined by the state of fatness, by the state of motion (exertion and work), by the temperature of the air, and is, at last, dependent on the presence or absence of water. A certain quantity of water evaporates through the skin and lungs, by the escape of which, as the necessary condition for the communication of motion, death is accelerated. There are cases in which, by means of undiminished water-drinking, death did not take place for twenty days, and, in one case, not for sixty days. In all chronic diseases, death follows from the same cause, viz. the action of the atmosphere. If those matters are wanting which are appointed in the body for the support of the process of respiration; if the organs of the sick person refuse to perform their function; if the power is lost of changing for their own protection the food which is taken into that state in which its components can combine with the oxygen of the air, then are their own substances, the fat, the brain, the substance of the muscles and nerves, used for this purpose. The actual cause of death is, in these cases, the process of respiration—the influence of the atmosphere. Want of nourishment, and want of power to convert it into the component parts of the body, is want of an opposing force. This is the negative cause of the cessation of the vital activity. The flame goes out because the oil is consumed. It is the oxygen of the air which has consumed it. In many states of disease, substances are produced which cannot be used for the purposes of assimilation. They are removed from

the body simply by abstaining from food. They disappear without leaving a trace, because their component parts enter into combination with the oxygen of the air. From the moment in which the function of the skin and lungs undergoes interruption, substances rich in carbon appear in the urine, which changes its ordinary colour into brown. The process of respiration is the falling weight—the stretched spring which keeps the clockwork in motion. The act of respiration is the stroke of the pendulum which regulates it. We know in our ordinary clocks, with mathematical certainty, the changes which, by lengthening the pendulum, or by external temperature, will be produced on its ordinary rate of going; but only by a few is the influence which the air and temperature exercise on the body of man clearly recognized, though the detecting of the conditions necessary to keep him in the normal state is not more difficult than it is in an ordinary clock.

[To be continued.]

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#### ON THE REMEDIAL EFFICACY OF SELTZER WATER.

By EDWIN LEE, M.R.C.S. &c.

(For the *London Medical Gazette*.)

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SELTZER water is regarded by most persons in England but as an agreeable cooling beverage. It possesses, however, great medicinal virtues, and is extensively employed in the practice of medicine upon the continent, and from having myself frequently had occasion to witness its beneficial effects, I am desirous of recalling the attention of the profession to it. It is one of the very few mineral waters applicable in acute disease; and its use in febrile affections is generally found to be highly advantageous, from its properties in cooling the system, allaying thirst, augmenting the urinary and cutaneous secretions, and cleaning the tongue and fauces from the viscid mucus which so frequently accumulates upon them; the proportion and admixture of its constituent parts (16 grains mur. soda, 15 grains carb. soda, 15 cubic inches carbonic acid gas, to the pint of water), rendering it admirably adapted for these purposes. Dr. Wetter, of Berlin, speaks

very highly of its efficacy when given in small and frequently repeated doses in the fevers which prevail in summer with a degree of erythism of the upper part of the alimentary canal (gastric fevers), but unattended by acute inflammation, especially when there is repeated vomiting, which so frequently resists the measures employed against it. Dr. Cullen was likewise in the habit of employing this remedy, mixed with whey, in several diseases attended with fever. Of course the previous removal of effete matters from the alimentary canal by laxatives is to be attended to. In irritation of the urinary organs, attended with gravel, or with a secretion of ropy mucus from the bladder, its effects are strongly marked, as also in stomach and hepatic derangement, with the character of torpor, or of irritability, with acidity and pyrosis, as is frequently found to occur in those who have been accustomed to the abuse of spirituous liquors. Its habitual use is no less advisable in cases of enlarged mesenteric glands, and the attendant impaired digestive power occurring in scrofulous children, in which case the addition of a portion of milk might often be made with advantage. It is, however, in some chronic affections of the air-passages, and in the early stage of phthisis, that this water possesses the greatest efficacy, and in which it is more frequently employed than in any other class of complaints. Hufeland said of it, with reference to its effects in phthisis—"In this disease, when other powerful remedies produce no good effects, Seltzer water has often an extraordinary efficiency. When there exists relaxation of the mucous membrane, by the exciting property peculiar to it, the energy of the relaxed vessels and mucous glands becomes re-established. In the tubercular kind, it resolves obstructions, without exciting inflammatory irritation; and where inflammatory complication exists, it regulates the abnormal secretion, and often prevents suppuration. I say all this from great experience, and could adduce many cases of success. Seltzer water seems to contain the due admixture of principles required in this disease; viz. a slightly stimulating action, and the faculty of producing an increase in the power of the lungs and glands without causing determination of blood to them, or

accelerating the circulation through the body; and produces the best effects in this disease when mixed with a third part of warm milk, especially ass's milk\*. In this, as in all chronic diseases, a large quantity, as a bottle, or a bottle and a half a day, or sometimes more, is requisite; and as it is now freely imported, there is no obstacle to procure it in any quantity that may be desired: for, with regard to the artificial Seltzer water, as it has been hitherto manufactured, it is not so well adapted for remedial purposes as are the imitations of other waters, on account of its being too much charged with gas; though this might easily be altered, and I trust will be in the future manufacture of Seltzer water at the establishment in this town. In a little brochure published last year†, to which I may refer those desirous of more detailed information respecting the composition and effects of Seltzer water, the question is considered, "Can the artificial be an efficient substitute for the natural Seltzer water?" and the opinions of M. Caventou on the subject are quoted. This gentleman says, "the fictitious Seltzer water produces, in a great number of patients, accidents which necessitate the substitution of the natural water for it. The sudden disengagement of carbonic acid gas causes, in many persons, a no less sudden distension of the stomach, accompanied with troublesome, and even painful eructations, agitation, and a greater or less degree of congestion towards the brain. We have seen in some cases, where there was great sensibility of the stomach, and even where this organ was influenced, that the artificial Seltzer water could not be borne; whilst the natural water was salutary. On other occasions, where Seltzer water has been administered to allay vomiting, we have seen the too sudden and too copious separation of the gas in the artificial water increase this symptom; whereas the natural water removed it. Lastly, it is generally remarked that the natural Seltzer water is infinitely better adapted to pulmonary cases than the artificial. The same observation applies to chronic hepatitis."

\* *Practische Uebersicht der vorzüglichsten Heilquellen Deutschlands.*

† *Memoire sur l'Eau de Seltz Naturelle, ses vertus curatives et hygieniques.* Bailliere, Regent Street.

The author of the above mentioned pamphlet speaks highly of Seltzer water as a wash for the mouth, and of its beneficial effects upon the teeth and gums, both as regards their appearance, and also in arresting the progress of caries.

Brighton, 170, North Street,  
April 15, 1842.

### CASE OF DIABETES MELLITUS.

*To the Editor of the Medical Gazette.*

SIR,

IF you deem the following case worthy of being placed on record, its insertion in the *MEDICAL GAZETTE* will oblige, sir,

Your obedient servant,  
JOSEPH BELL.

Barrhead, April 5, 1842.

March 24th, 1841.—John H., æt. 50 years, a native of the North of Scotland, of ordinary stature, by trade a sawyer. He is of a relaxed leucophlegmatic appearance. About angles of lower maxillary bone there are several vestiges of suppurated glands, some of which are still enlarged and painful. He states that for nearly a year he has been passing a large quantity of urine, and that it has greatly increased within the last four months. During the last twenty-four hours he has voided 108 fluid ounces of a light straw-coloured urine; it has a smell like honey, and of sweet taste. He feels very feeble, but his appetite is not impaired: thirst considerable; tongue covered with a dirty white or buff-coloured fur. He is occasionally troubled with pain shooting through head, and giddiness is sometimes troublesome.

He has had palpitation of heart for many years; pulse 78, full; the palpitation of radial and ulnar arteries, as well as their phalangeal branches, is distinctly visible through integuments. Bowels said to be regular. The specific gravity of urine was found to be 1.0493. It yielded a large quantity of saccharine matter. No traces of urea could be detected.

Habt.  $\mathcal{R}$  Tr. Opii,  $\mathfrak{z}\text{ij}$ .; Tr. Ferri Muriat.  $\mathfrak{z}\text{ss}$ .; Aq. Puræ,  $\mathfrak{z}\text{xij}$ . M. sumt.  $\mathfrak{z}\text{j}$ . t. d. et habt.  $\mathcal{R}$  Sulph. Quin. gr. xxxvi.; Conser. Rosæ,  $\mathfrak{z}\text{iiss}$ . M. ft. mass. et divid. in pil. xxiv. Capt. unam 6ta. q.q.h.

To have for diet stale bread, mutton-chop, roast beef, biscuit, &c.

29th.—Since he commenced taking his medicine urine has gradually decreased; during the last twenty-four hours he has voided 56 fluid ounces, and says he made a similar quantity yesterday. Specific gravity is now 1.035, and less saccharine matter contained. General health improving; pulse 68; no pain of head; palpitation less; thirst less; tongue cleaner.

Pergat.

April 10th.—The quantity of urine voided daily since 3d inst. amounts to 42 fluid ounces. Specific gravity 1.026. Saccharine odour and matter gone; tongue clean; general health continues to improve; pulse 66; bowels regular.

REMARKS.—Having frequently witnessed the good effects of opium and tr. ferri muriat. in cases of diabetes, I was induced in the foregoing instance to prescribe these two preparations, along with the sulph. quinin. in the same manner (or nearly so) as recommended by C. Clay, Esq., of Manchester, in the *Lancet*, Oct. 10th, 1840. The happy change which followed the use of the medicine in this case was most satisfactory, and has been as yet permanent; the man up to this moment having no return of the complaint.

The following I think is the formula recommended by Mr. Clay:—

$\mathcal{R}$  Tinct. Opii,  $\mathfrak{z}\text{iiss}$ .; Tr. Ferri Muriat.  $\mathfrak{z}\text{ij}$ .; Sulph. Quin. gr. viij.; Aq. Destill.  $\mathfrak{z}\text{vj}$ . An ounce to be taken three times a day.

I would prefer giving the sulph. quin. separately, in form of pill, as being more elegant, and more easily taken by the patient. The remedy can be merely recommended on empirical grounds, however unsatisfactory this may appear to those who would wish to see the disease treated on philosophical principles—a circumstance much to be desired; but really when the true pathology of diabetes is so far from being elucidated (despite of the laborious investigations of many eminent physicians), we are glad to avail ourselves of any remedial agent which has been found, even in a few cases, to procure relief.

## ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

*De la Menstruation considérée dans ses rapports Physiologiques et Pathologiques.* Par A. BRIERRE de BOISMONT, D.M. &c. &c. Ouvrage couronné par l'Académie Royale de Médecine. Baillière, Paris, 1842. 8vo. pp. 560.

*On Menstruation, physiologically and pathologically considered.* By A. BRIERRE de BOISMONT, D.M. &c. &c. Prize Essay of the Royal Academy of Medicine.

ALTHOUGH we cannot venture to say that M. de Boismont holds out the attraction which all so eagerly seek for, namely, novelty of facts or opinions, yet it is due to him, and proper for the information of our readers, that we should state the conviction upon our minds after an attentive perusal of his work. In the first part of the work—devoted to the physiology of the subject—he gives us many very interesting statistical tables, which establish, in a much more satisfactory and convincing manner than has been done by any preceding writer, various facts relating to the physiology of the very important function of menstruation. We shall reserve to ourselves the privilege of passing over much elementary matter which has very fairly its place in a professed treatise upon the subject, but which is unsuited to our condensing pages and purpose. As a proof that M. de Boismont enters at once "in medias res," we quote his first sentence, "L'époque de la puberté est enfin arrivée." The well-known changes that occur at this period are briefly described, and an interesting statistical account is given of the age at which menstruation first occurs in the country, towns, and the metropolis, in females of the lowest, the middling, and the highest classes of society. Twelve hundred females, selected from these different grades, form the basis of his inquiries, which were commenced ten years ago. The conclusions are in keeping with the generally received opinions upon the subject. In the country the menstrual function was, upon the average, found to occur for the first time several months later than

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in cities; nearly fifteen being the average age. Very few, too, of these women of the lower classes menstruated before eleven years of age; while, among the higher classes, a certain number menstruated as early as seven, eight, nine, or ten years. In towns sufficiently distant from the metropolis to be beyond its sphere of attraction, of 205 women the greatest number began to menstruate at fourteen years of age. In proportion, in fact, as an approach was made to the capital, the age at which this function was first established was found to decrease. As may be imagined, exceptions to this general rule are not uncommon. In the metropolis itself, of 359 females the greater number began to menstruate at fourteen years of age; but in a much larger proportion than in the country and towns, the period varied from nine to thirteen years. The train of inquiry pursued by the author to arrive at this conclusion is ingenious; and it shews how much care and accuracy are required in statistical investigations: for, in this instance, without these important requisites, an exactly opposite result to the true one would have been deduced. The remarks M. de Boismont offers upon the injurious influence of modern habits and education, in forcing premature menstruation in young females, especially among the higher classes, and those who "ape their habits," are well and forcibly put, and cannot be perused without interest by the philanthropist as well as the medical practitioner. We have not the smallest doubt of the fact, which M. de B.'s observation has verified, that a strictly moral and religious education would have the effect of retarding the first appearance of menstruation in young females. The influence of climate upon the function of menstruation has rarely been contested. A few remarks upon this part of the subject are made by our author. It is well known that girls of nine or ten years' of age who menstruated regularly in the East Indies, have ceased to do so, upon their arrival in this country, for four or five years\*. Various cases are scattered through medical writings of children of two or three years of age who menstruated regularly. In most of these instances the sanguineous discharge

\* Cyclopædia of Practical Medicine, vol. iii. p. 110.



was, no doubt, accidental hæmorrhage rather than true menstruation. In a few cases, however, menstruation has been quite normally established at an unusually tender age, and was accompanied by all the other signs of puberty. M. de Boismont adds three striking examples to the number. We, too, have known such cases; but still, with Moreau and others, we are quite convinced that such precocious discharges usually constitute a state of disease which requires relief. Experience, too, has established the fact, which might have been anticipated, that, when the menstrual function is so very early in its appearance, weakness and premature old age are the ordinary results. Among other influences which act upon the establishment of puberty in females, and which it is very difficult to appreciate correctly, is that of peculiarity of temperament. M. de B. touches upon this subject but briefly. His statistical records, however, prove that females of a sanguine temperament menstruate earlier than those of a "lymphatic" temperament.

*Appearance of the Menses with or without symptoms.*—The author comes to the, no doubt correct, conclusion that menstruation is established, in most women, without the agency of medical means, and by the unassisted efforts of nature; and that not unfrequently the health has been injured, and the menstrual functions retarded, by attempts to establish it by medical means, which were apparently judicious. The knowledge of these facts, and important ones they are although they are too frequently lost sight of, ought to guide the conduct of the physician. When there is no trace of organic mischief, and the other functions are regularly performed, he should restrict himself to the general means of preserving health. The period that elapses between the first symptoms that are premonitory, and the actual appearance, of the menstrual flux, is liable to great variations. In some females the premonitory symptoms lasted but a day; in others as long as four years, or more. But, however long may be this period, some other necessity than the assumed one of the non-appearance of the menses must exist to justify the practitioner in attempts to hasten the just appearance of the discharge. Although the whole of the female economy

is more or less influenced by the first approach of menstruation, the genital organs and the nervous system are more decidedly so. Without precisely admitting the utility of the mathematic precision with which M. de B. has attempted to trace the progressive changes that take place in the size of the uterus and vagina from early infancy to the age of puberty, which, of course, vary greatly in different individuals, the pages devoted to this inquiry contain many observations that are worthy attention, inasmuch as they show the exquisite skill with which nature gradually prepares important organs for very important duties. M. de B. thinks it probable—we confess we do not—that the changes in the diameters of the uterus, which occur previous to puberty, explain those pains of which the uterus is so frequently the seat at the approach of menstruation, and which vary in severity from a slight and transient inconvenience, to great and long-continued suffering. The constantly varying and almost as constantly perplexing "nervous symptoms" which occur so frequently at the approach of puberty in young females, especially among those of the higher ranks of society, are too well known to be formally dwelt upon. Many of the author's remarks, however, upon this part of the subject, are practically of much importance. Among other organs that commonly suffer amidst the general disturbance of the period referred to, the head is often the first affected. In many cases, the headache that is complained of depends upon plethora, but it should be borne in mind by the practitioner that this symptom more commonly depends upon derangement of the nervous system. We frequently have to contend with headache of the severest kind in young females in whom there are none of the signs of plethora. "It would be in vain that we persisted in combating this symptom, in a crowd of cases, by antiphlogistic means: it would resist repeated bleedings." It would be scarcely possible to enumerate the different forms and types of these headaches. Sometimes the whole of the head is affected; sometimes only one side, constituting the "migraine," or hemicrania: the back, the forehead, or the sides of the head, may suffer. The pain may be intense, or dull. Sometimes it is continued, more fre-



quently it has remissions. "In one case it presented the form of a tertian intermittent." Like the pains in the loins, the headache ceases on the appearance of the menses, but it frequently returns, like the former, with each menstrual period.

To many of our readers it may seem an unnecessary waste of words to insist upon the folly and mischief of attempting to cure these headaches by repeated abstractions of blood. Yet in ordinary practice, how commonly is this error committed, in spite of the doctrines of teachers and numerous writers. And we would observe, that even when the nature of the case clearly contra-indicates the use of the lancet at all, and points to a very opposite mode of treatment, that a moderate bleeding very often produces a temporary relief, and that hence the inference is most erroneously drawn by the young and inexperienced practitioner, that if one small bleeding has done a little good, complete relief will follow a more determined employment of the same means. We, who have spent many years in trying to correct our own blunders, and in observing the blunders of others, have too often seen, as others must have also, the melancholy effect of bleeding for almost every pain, in almost every constitution and condition.

Various other symptoms indicative of the first approach of menstruation are mentioned by the author. We strongly suspect, although he does not mention the fact, that insanity, which he considers as a not unfrequent occurrence at this period, must have been dependent upon some hereditary predisposition, or upon some accidental cause, and that it neither can, nor ought to be, admitted into the catalogue of evils which sometimes appear owing to the effort of nature in establishing the menstrual flux. Among other symptoms which are referrible to derangement of the vascular system at the approach of puberty, M. de B. mentions a very unmanageable form of ophthalmia, which resisted every treatment, and which disappeared "as if by enchantment," when the catamenia appeared. At about the age of puberty it is not uncommon for a train of symptoms to occur which may easily be mistaken for formidable pulmonary disease." The breathing is often

short and difficult; the chest appears to be expanded with difficulty; the patient is breathless upon the slightest exertion. She frequently suffers from a nervous and spasmodic cough. We are frequently consulted for young females with a little dry, teasing, and almost constant cough, which is sometimes accompanied by spitting of blood; and the greatest anxiety is felt by the parents. An attentive exploration of the chest by a skilful stethoscopist will usually dissipate alarm. If the respiration is heard clearly during inspiration and expiration; if it be vesicular; if there are no "rales," and no abnormal sounds; and if, upon percussion, perfect resonance is heard, we may be satisfied the lungs are safe." (p. 62.) These, we would add, are the very cases in which the public are so constantly imposed upon by dishonourable and cruel knaves, by quacks, who care not what domestic misery they cause, if they can put money in their purse. True, they promise a cure, but "consumption" cannot be even mentioned without anguish to a mother.

*Quantity of the menstrual discharge.*—No wonder, considering the difficulty of forming a correct estimate upon this point, that different conclusions have been arrived at. Different observers who have devoted their attention to this part of the subject are greatly at variance. Some fix three ounces (English) as the average quantity: some, Sauvages and Freind, for example, sixteen or twenty ounces. For our own part we are quite satisfied that, even in the same woman, the quantity of the discharge varies on different days of its flow; that it varies greatly at different monthly periods, and that it is liable to be either diminished or increased by so many accidental circumstances, without any derangement of health, that the attempt is vain to fix a correct and average estimate of the quantity.

The next point considered by the author claims the attention of the practitioner, in order that he may secure the confidence of the public by giving correct opinions in reference to it. Of 654 women, 412 menstruated regularly after the first appearance of the discharge; 242 were "irregular" from the commencement. In 178 of these menstruation became regular after some time: in 65 it remained permanently

irregular. Two cases are related in which eleven and ten years elapsed before menstruation was regularly established; but with these exceptions the longest period before the function was regularly performed did not exceed six years from its commencement. The most frequent periods appear from tables given to be six months, and one and two years. The following are interesting results from the observation of 67 females. In three, "les regles" occurred every day for a year, and sometimes amounted to true hæmorrhage; and still these women remained healthy, and never felt weak. In 11, every eight and fifteen days. In one instance this irregularity persisted for several years every eight days; the health of the girl still remaining good. In 17 cases the discharge appeared every ten, fifteen, or twenty-one days, with occasional intervals of two, three, and four months.

In one instance the flux was very copious one month, less the next, and absent the third. This irregularity continued for a year. In nine the menses appeared every two or three months. In three of these at these periods for two years. In two for four years. In seven the periods were five, six, or seven weeks. Other variations are mentioned, which, after these examples, need not be detailed. There are many, and by no means unimportant practical hints to be drawn from these facts; one of which is the necessity of speaking doubtfully as to the regular establishment of menstruation, even when it has once appeared; another, that we are not confidently to predict mischief because menstruation is very irregular; a third, that nature *alone* not unfrequently establishes the normal discharge of the menses after it has been long irregular. Forty-two examples are given, showing that the period during which menstruation ceases altogether, after having once occurred, varies from a month to five-years. In ten instances the function was not regularly established until pregnancy and labour had been gone through. The case related by Bouvier is a rare one. The patient, of a delicate constitution, began to menstruate at the age of twenty-four. At this time she became deformed, and her health suffered. She continued capable, however, of performing her habitual duties until a

very advanced age; and at seventy years of age she was admitted into the hospital of Rochefoucauld; and during the two years that she remained in it, she menstruated regularly. She died at the age of seventy-two, and upon dissection the organs of generation were found to be in a healthy state.

In the fifth chapter we have a detailed account of the local and general symptoms which generally accompany menstruation, and of which the author thinks we ought to admit two distinct classes; in one of which the uterus is affected; in the other, the numerous organs that sympathise with the uterus. Of 360 women, 278 suffered from pain, generally of the uterus, but frequently of the intestines; these pains were sometimes slight and intermittent; at others intense and continued. Some of these women suffered only during their virgin state; in others the pains began after marriage. In many each attack of pain was diminished upon the expulsion of coagula. In 40 of the cases referred to, weight in the region of the uterus was complained of at the period of the menses, which was no doubt correctly attributed to a congested state of the womb and its appendages. This local congestion ceases with the cause that produces it, and thus we can distinguish it from disease of the uterus. Its frequent repetition may become the "point de départ" of those organic lesions to which the uterus is so liable. M. de Boismont "has frequently met with cases of uterine hæmorrhage in women who were otherwise healthy. In some it was considerable, and lasted several days, without any diminution of the general strength, or any marked expression of suffering in the general appearance. This intermitting hæmorrhage may last much longer in women who menstruate irregularly, even for years, and yet not compromise health." It is well we should know the little hazard that may attend such cases, but a prudent practitioner would be upon the alert during the continuance of such a state.

In 76 cases M. de Boismont observed tumefaction of the belly at the menstrual period: it existed generally at each period: sometimes only occasionally; sometimes the belly was hard and extremely tense. This abdominal swelling, depending no doubt upon flatus in the intestines, was sometimes

unaccompanied by pain; but it was frequently associated with such increased sensibility of the abdomen that the slightest pressure could not be borne.

We find nothing in the general sketch that is given of the various nervous and hysterical symptoms that are so often associated with the menstrual function, to arrest our attention. "In three cases the sense of vision was lost or greatly weakened during several periods," each return of menstruation being indicated by complete blindness, or by great weakness of sight. Sometimes, too, there was a perversion of taste and smell. As our readers are doubtless aware, much ingenuity has been excited, and numerous arguments indulged in, to account for the periodical flow of the menses. We are of opinion that this part of the subject might be fairly dismissed by the confession, that the cause of the periodical phenomena of either health or disease is beyond our reach. M. de Boismont has rather unnecessarily, we think, given some formal tables for the purpose of establishing the conclusion that the moon has no influence upon the menstrual function.

The chapter upon the duration of each menstrual period is interesting. Of 562 women, the discharge continued for eight days in the largest number: in only a rather smaller proportion for three days. Particular localities, temperaments, and modes of living, have much influence in causing these variations. Some women are "unwell" only for a few hours, others for a much shorter period, and still without any disturbance of health. Equal variations, too, as to duration, occur in the same women at different periods, and without any appreciable cause. Marriage very frequently renders women regular who before were not so. Upon the warmly disputed point of menstruation during pregnancy, the author says, "in five out of eight cases, the menses appeared for the first two, three, or four months after conception; in three, menstruation continued throughout the whole period of pregnancy." We have before, upon different occasions, touched upon this question, and we now briefly state that our personal experience convinces us of the fact, that menstruation may occur during several months or even during the whole of pregnancy; or, at least, to use the lan-

guage of Gooch, "that such a periodical discharge may occur that neither the patient nor the practitioner can distinguish from menstruation." The source of the menstrual discharge has also been much discussed. At present, all physiologists agree that the uterus produces it when the function is regularly performed; but it may, under extraordinary circumstances, be furnished vicariously by other parts. In the absence, too, of demonstrative evidence, it may be assumed that the menstrual flux exhales from the capillary vessels of the uterus, the vessels from which it flows belonging especially to neither the arteries nor veins.\*

Upon the subject of the final cessation of menstruation M. de Boismont adds nothing to what is generally known. His observations lead him to the conclusion, which we have no doubt is perfectly correct, directly as it is opposed to the popular belief, "that the critical age does not increase the mortality of women" (p. 245.)

The second part of the work on the Pathology of Menstruation contains a brief sketch of the various diseases which are, more or less, connected with derangement of the function.

## MEDICAL GAZETTE.

Friday, April 29, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## THE COLD WATER SYSTEM.

MORE than two years have elapsed since we gave an account of the new method of treating diseases in Germany by the external and internal use of cold water†. Since that period much has been written on the subject in Germany and France, and two English accounts of the plan are now lying before us. The first is written by our correspondent Mr. Edwin Lee, in the form of an appendix to the second part of his

\* Burdach, *Physiology*, by Jourdan, i. 296.

† MEDICAL GAZETTE, Oct. 12th, 1839.

treatise on the German Baths. The other is a substantive work by Mr. Claridge\*, the author of a Guide along the Danube.

The establishment visited by Mr. Lee is situated at Marienberg, on an eminence overlooking the town of Boppard, on the Rhine; Mr. Claridge resided at the original establishment at Gräfenberg, in Austrian Silesia.

Mr. Lee's account, though highly favourable, is tempered by sound professional criticism; while the unthinking enthusiasm of Mr. Claridge, a mere layman, makes one shrink from his statements; and as they are exaggerated on their very face, one hardly knows how much ought to be struck off to reduce them to plain truth. One's natural tendency in such a case is to disbelieve even facts which have got into bad company; and when we are told that the cure of acute disease in the hands of Vincent Priessnitz is mere child's play, we are tempted to ask whether the plan is not child's play altogether. When a tradesman asks us ridiculously much, says Lord Chesterfield, we offer him ridiculously little.

Yet, as the faithful chroniclers of every thing conspicuous which appears above the medical horizon, whether a steady light, or an *ignis fatuus*, we think it right to place our readers on a level with the knowledge of the age concerning the cold water cure, or, as it is often called, *hydropathy*.

How long has this system been at work under the guidance of Vincent Priessnitz? Neither Mr. Lee nor Mr. Claridge enables us to answer this question. According to the former, the house at Gräfenberg was built in 1824, and was soon insufficient to receive the numerous invalids; the latter begins his account with the year 1829,

when the patients amounted to forty-five only. Mr. Lee informs us that in 1830, the patients were five hundred and fifty-five in number; while Mr. Claridge's reckoning for the same year is only fifty-four. This discrepancy, however, is of small importance, as they both agree that the system has spread of late years. Mr. Lee says that "this method of treating diseases has been of late years very much in vogue in several parts of Germany;" and the lay advocate gives a list of forty-six establishments where it is carried into effect. They are chiefly in Germany, but a few are in France, Belgium, Poland, Russia, and Hungary.

Gräfenberg is an appendage of the small town of Freywalden (according to Mr. Claridge, Freiwaldau or Fréiwaldau). It is 70 English miles from Breslau, 200 from Dresden, and 260 from Berlin.

What is done at Gräfenberg? As it is easiest to ascend from particulars to generals, perhaps the most ready answer to this question will be to tell what was done with Mr. Claridge, who was suffering from rheumatism.

"The first thing he did was to request me to strip, and go into the large cold-bath, where I remained two or three minutes. On coming out he gave me instructions, which I pursued as follows:—At four o'clock in the morning my servant folded me in a large blanket, over which he placed as many things as I could conveniently bear, so that no external air could penetrate. After perspiration commenced, it was allowed to continue for an hour; he then brought a pair of straw shoes, wound the blanket close about my body, and in this state of perspiration I descended into a large cold-bath, in which I remained three minutes; then dressed and walked until breakfast, which was composed of milk, bread, butter, and strawberries (the wild strawberry in this country grows in abundance from the latter end of May until late in October); at ten o'clock I proceeded to the douche, under which I remained four minutes, returned home, and took a sitz and foot-bath, each for

\* Hydropathy; or the Cold Water Cure, as practised by Vincent Priessnitz at Gräfenberg, Silesia, Austria. By R. T. Claridge, Esq., &c. London. 1842.

fifteen minutes; dined at one o'clock; at four proceeded again to the douche; at seven repeated the sitz and foot-baths; retired to bed at half-past nine, previously having my feet and legs bound up in cold wet bandages. I continued this treatment for three months, and during that time walked about 1000 miles. Whilst thus subjected to the treatment, I enjoyed more robust health than I had ever done before; the only visible effect that I experienced was an eruption on both my legs, but which, on account of the bandages, produced no pain. It is to these bandages, the perspirations, and the baths, that I am indebted for the total departure of my rheumatism."

This sweating plan has a chapter dedicated to it with the exquisite title of "Hydrosudotherapia, or Sweating and the Bath." The patient is wrapped up in a blanket, feather-bed, counterpane, and sheet, till he resembles a mummy; perspiration comes on after a period varying from half an hour to two hours, and is then allowed to continue for a time also varying, according to the prescription of Priessnitz, from half an hour to two hours. Some patients are made to perspire daily, others every second or third day. The patient then proceeds to the cold-bath, in which he remains from two to eight minutes.

This, however, is by no means the universal treatment:—"Sweating is not administered to one-half of the patients who resort to Gräfenberg," says Mr. Claridge. Several other methods are used. Many patients are treated by the application of cold wet bandages; clysters of cold water are used for the cure of constipation as well as diarrhoea; not to mention injections into the ears, nostrils, and genitals. As for drinking cold water, this is the panacea for all human infirmities. It is right to drink it at all times of the day; yet, as Bacon says of goodness, that it admits no excess, but error; so water-drinking admits no error, but excess; for although it may be pursued

after breakfast, this must not be done so as to overcharge the stomach. The usual quantity drunk daily is from twelve to twenty glasses of water.

The baths themselves are of various sizes, such as whole baths, half baths, leg baths, finger baths, and what Mr. Claridge calls sitz baths, i. e. sitting baths, or bidets.

Nor are these the only methods by which impurities are eliminated from the blood:

" Aliis sub gurgite vasto  
Infectum eluitur scelus."

Some are taken into the forest, where the mountain streams are conveyed into pipes, and dashed upon their diseased limbs in the form of a douche, with a fall of ten, fifteen, or even twenty feet.

When Anacharsis was asked how the Scythians were able to go naked in winter, he inquired in reply, "How can you Greeks bear to leave your faces exposed?" "Because our faces are used to it." "And we Scythians are all face." Mr. Claridge, without quoting Anacharsis, adopts the same theory, and imagines that use might entirely supply the place of wool. For our own parts, we verily believe this to be mere moonshine, and that in spite of the *joli mot* of Anacharsis, both theory and practice are on the side of furs and flannel. The heat generated by a well-clothed body may easily supply the expenditure of a bare face; but if the thermometer is standing at 20° Fahrenheit, how is a simple body, without wool or sables, to supply the heat continually abstracted by the frozen atmosphere around? The Indians of North America, whom some regard as a race of Gymnosophists, dress most comfortably in winter, as any one may learn from Mr. Catlin; and we have no doubt that the ancient Scythians wore warm cloaks in cold



weather, in spite of Anacharsis and the anecdote-books.

How, too, can Mr. Claridge, who appeals to experience so stoutly in favour of Priessnitz and cold water, deny its evidence in favour of hot? Surely, if one single point is proved in the practice of physic, it is the benefit derived from the judicious use of hot springs. If some foolish people like to scald their mouths at Aix-la-Chapelle, or elsewhere, this does not prevent thousands from regaining their health at the same places; and, in truth, nearly in the same manner as at Gräfenberg, namely, by restoring the functions of the skin.

Mineral waters are avoided by all animals, says the lay witness. By no means, if we believe the stories of the manner in which the virtues of several springs have been discovered. But even if this were the case, and neither horse nor cow could be persuaded to drink of Harrowgate, or Wiesbaden water, are men, therefore, to be debarred from fountains of tried efficacy? Does any quadruped ever lie with its occiput in a pan of cold water, as a man does in Mr. Claridge's lithograph?

The diet at these cold water establishments is simple and salutary. The teatotaler here finds that he has by no means reached the simplicity of nature and Gräfenberg. Not only wine and other alcoholic liquors, but tea, coffee, and similar stimulants, are utterly unknown in these retreats. When Mr. Lee visited Marienberg the dinner consisted of soup, roast meat, potatoes and other vegetables, cutlets, and a plain pudding. Water was the only beverage. Breakfast consisted of bread and butter, with cold milk and water; and supper of the same articles, with the addition of stewed fruit.

The diet at Priessnitz's table appears, by Mr. Claridge's account, to be nearly the same. Even spices, such

as pepper and cinnamon, are prohibited: "Let us use," says Priessnitz, "seasonings which nature has given us, and leave to foreigners theirs!"

Lastly, we come to the practical question, what diseases are benefited by profuse perspiration, aided by pure air, early hours, and abstinence from stimulants? If we turn to Mr. Claridge, the list of water-cured diseases is so long, that it is like scanning the pages of Cullen's Nosology. One is inclined, like Goldsmith, to wonder at the obstinacy of people in dying, when a certain cure is so readily obtained; and in imitation of the old verse,

*Cur moriatur homo, cui salvia crescit in horto?*  
one inquires,

*Cur moriatur homo, cui Priessnitz suppetit undam?*

Mr. Lee supplies us with a better answer. Gouty and calculous disorders, some forms of chronic dyspepsia, fixed and shifting rheumatic pains arising from suppressed perspiration and exposure to cold, hysterical and spasmodic attacks, hypochondriasis, and long-standing intermittent complaints, whether in the form of ague, neuralgia, or irregular muscular movements, are benefited by this regimen. To these may be added leucorrhœa, disordered menstruation, piles, and syphilis, particularly when it has been of long duration, and much mercury has been taken.

We can easily suppose that in many or most of these diseases, a sudorific treatment may be of advantage; and especially when the syphilitic or mercurial poisons are circulating in the blood. There is evidence to show that salivation has recurred long after the termination of a mercurial course\*; so that it seems possible that mercury may circulate for some time, and then, by an effort of nature, be thrown out of

\* Christison on Poisons, p. 30-78.

the blood-vessels, and again produce its specific effect on the glands. Perhaps other poisons of a more subtle kind may, in a similar manner, be retained for some time in the system. As for the method pursued at Gräfenberg, enough has been said of it to excite rather than gratify our curiosity; but we have little doubt that, in spite of the extravagant praises of Mr. Claridge, "Hydropathy" contains something to reward the diligence of the eclectic physician.

#### MEDICAL SOCIETY OF LONDON.

A SPECIAL address was voted by the Medical Society to Dr. Clutterbuck on his retiring from the presidency, and a dinner given to him at the Albion Tavern. Mr. Pilcher, the new president, took the chair on this occasion, and the address was presented by Mr. Clifton, the secretary. It appears that Dr. Clutterbuck is one of the oldest members of the very respectable institution referred to.

#### ROYAL MEDICAL & CHIRURGICAL SOCIETY.

March 22, 1842.

##### THE PRESIDENT IN THE CHAIR.

*Notice of Cases of Plague contracted in the Lazaretto of Constantinople, in a Letter addressed to John Davy, M.D., F.R.S., Inspector-General of Military Hospitals, by Mons. PEZZONI, Conseiller d'Etat à S. M. l'Empereur de toutes les Russies, attaché à la Legation Imperiale près la S. Porte, in proof of the contagion of Plague; with Remarks by the former.—(Communicated by Dr. Hodgkin.)*

DR. DAVY observes, that the long-agitated and very important question, whether the plague is truly a contagious disease, or merely an endemic or epidemic, is not decided, appears clearly from two of the latest works published on this subject, viz., those of Clot Bey and Mons. Boulard. By the former an attempt is made to prove that the oriental plague is not contagious; whilst by the latter the contrary is maintained. This difference of opinion is the more remarkable, as their researches were conducted chiefly in the same country, Egypt, and about the same time, and in part in conjunction, both of them having belonged to a commission, which, for a considerable time, devoted

themselves to the investigation of the malady within the walls of a plague hospital. Dr. Davy remarks, that it is very desirable this question should be brought to an end; for, whilst it is undecided, there is little probability of any thing of moment being attempted in regard to the quarantine laws, which stand in so much need of being revised and reformed.

Dr. Davy states, that he left England in November last, employed by her Majesty's government on particular service, with instructions from the Foreign Secretary to make especial inquiries on the subject in question, in connection with the quarantine system. His mind, he says, was in a state of doubt on the point at issue, but if he had a bias, it was rather in favour of the non-contagiousness. At Constantinople he found all the medical men of any experience decided contagionists, but his own opinion remained the same till the month of June, when some facts came to his knowledge which appeared to be demonstrative that plague is really contagious. These facts were briefly the following:—At a time when Constantinople and its neighbourhood were free from plague, and had been so for three years, a vessel arrived from Egypt with cases of the disease on board, which, with the whole of the crew and passengers, their effects and merchandise, were disembarked, and placed in quarantine in the Lazaretto. Of the guardians and porters employed on this service, two contracted the disease, one of whom died. They belonged to a population of 800,000 souls, free from even the suspicion of plague, and had been so for three years, and which remained free up to the time of Dr. D.'s departure, the latter end of September, unless an exception be made in the case of a monk just liberated from the Lazaretto, and who, it cannot be doubted, contracted the disease whilst confined there. These two cases, with a notice of the monk and the son and daughter of the surveyor of the Lazaretto, are the subjects of the letter addressed by M. Pezzoni to Dr. Davy. The author is a gentleman long resident in Constantinople, a member of the Superior Council of Health, and who for many years has specially directed his attention to the question of the contagion of plague.

M. Pezzoni details very fully all the particulars connected with these cases; and there is appended to the letter a table of the patients admitted into the hospital of the Lazaretto from the 8th June to 15th August, as also a declaration on the part of M. le Dr. Robert, the director-general of quarantine, as to the existence of the disease. Our limits will not allow us to enter into these interesting details, but we may state that Dr. Davy expresses his desire that the facts brought forward by M. Pezzoni should have

the same weight with others as they have had with himself; and be held conclusive that plague *can* be propagated by contagion in persons in good health, and in a place and atmosphere in a healthy state. Dr. Davy adds, that about the same time that the proofs of the contagious nature of plague were afforded in the Lazaretto of Constantinople, a similar case occurred in the Lazaretto at Malta; the facts relative to which have been recorded by Dr. Gravagna, the principal health officer. Dr. Gravagna reasons much in the same manner as M. Pezoni against the non-contagionists, considering the occurrence of plague in a Maltese who communicated with plague patients in a ship from Alexandria (that city being then infected with plague), as proof demonstrative that the disease can be propagated by contact.

"If," adds Davy, "this be admitted to be proved, an important step surely has been made in the inquiry, which, followed up with caution, may ultimately bring the investigation to a satisfactory end, so that our knowledge of plague may be on a similar footing to that of variola, or any other disease which can be mentioned, that has been carefully and dispassionately studied."

Mr. Davis said, that having spent two years in countries infected with the plague, and passed two whole seasons in a plague hospital, he might be allowed to speak on the subject before the Society, and to express his most positive opinion that the plague is not a contagious disease. During the time he had mentioned he had spent whole days in company with those suffering under the disease; he had felt his patients' pulses, and continually attended on them every four hours; he had even for four or five successive nights slept close between two persons dying of the plague, yet he had never been affected by it. If the disease were contagious, how was it, he would ask, that there was a regular season for it—that it always commenced its ravages about December, continued till the middle of June, and then ceased? It was not true that plague was ever conveyed in ships or by merchandize. It always began in the interior; there it would often for many months, so long as the wind blew from the coast, continue its ravages without spreading; and then, with a change of wind, would make its way to the coast, and people would suppose it had been brought there by the ships. Numberless circumstances favoured its occurrence, altogether independently of contagion: fear, for instance. He remembered two young men while he was in Egypt, who came to him in great anxiety, because they had been appointed to medical service in the Plague Hospital, where they said if they once en-

tered they were certain they should die. He obtained other service for them; yet they both died of plague, though they had never been near the hospital. He would say a word of the treatment. At the time when he was in the habit of seeing the disease many different plans were employed. Some bled all their patients largely; but he believed that nearly all who lost much blood lost their lives also. Excluding such irrational modes of treatment as this, the deaths were, on the average, about one-half, whatever method was adopted; whether bark or tartar emetic, or opium or ether, or mercury, or any other. Near the end of his service a case occurred which he thought threw some light both on the nature of the disease and the right mode of treating it. At a great dinner given to their mess, he observed a servant, as he was handing some wine, stagger, and suddenly become exceedingly pale and dirty-complexioned. He had him at once removed, but he rapidly died of plague. It seemed to prove that one of the chief circumstances in the disease was the retreat of blood from the skin, and the want of a sufficient *vis a tergo* for the blood. From this time, therefore, he took care that a warm bath should be at all times kept ready in his regiment's quarters; and the instant a man was seized with signs of plague, he was put in it, and kept there—wine, ether, or some other stimulant, being at the same time administered—till perspiration came on. By these means he never after lost a patient; but he was bound to say he did not begin to use them till the disease was on the decline. He would also mention, that if there was sufficient strength in the system, or sufficient *vis a tergo* for suppuration to take place in the buboes, the patients never died. Their recovery was equally sure when their system could be affected, though but slightly, with mercury.

Dr. James Johnson said, the only mode of reconciling the opposed statements of the advocates for and against contagion, was by supposing that they had seen the plague under different circumstances. One person, for instance, might see it exclusively in those places where it had arisen, and was maintained, by peculiar epidemic conditions; another might see it only where it had been conveyed from the place of its origin, and was propagated by contagion. It was nothing strange that a disease should commence in one method, and be propagated by another; that having originated as an epidemic, it should be propagated by contagion. No one could deny the contagious nature of syphilis; yet it could not have commenced by contagion; the first person who had it must have had it engendered in him by some cause altogether independent of contagion. And the same was probably true of plague and many other diseases.

Dr. Addison said that there was not one of the arguments adduced against the contagiousness of plague which might not equally be applied to any other of the analogous diseases which were universally admitted to be contagious. The immunity which any person enjoyed when placed amongst those dying of plague was no proof that it was not contagious. Several persons were known to have a similar immunity from small-pox, measles, typhus fever, &c. : and there were some who seemed to be proof against all the diseases by which others were ordinarily affected. The fact that Mr. Davis had not had the plague, was strong evidence that he enjoyed a peculiar incapability of receiving the disease ; for independently of contagion, the fatiguing service in which he was engaged might have been expected to render him very susceptible to the disease, from whatever source it might arise. As to the plague prevailing at particular seasons, that also was a character common to all the contagious diseases ; it was by no means essential that they should rage at all times. The same might be said of locality and other circumstances favouring its spread. The most strenuous defenders of contagion would not pretend that it was altogether independent of external conditions. In typhus fever, for instance, which was perhaps of all the diseases of this country the most nearly analogous to plague, this fact of its dependence for its degree of contagion upon external circumstances was often strikingly shown. He was aware that there were differences of opinion respecting the contagious nature of this disease, but he thought it was every year becoming the general opinion throughout the kingdom that, under certain circumstances at least, it was contagious. The chief of these circumstances were, poverty, the absence of the necessary precautions for ventilations, and the crowding of patients together in small spaces. This was often shown in hospitals. Dr. Marcet once, being anxious, in the beginning of his course of lectures, to illustrate the subject of typhus fever, collected together a number of cases in one of the wards. The consequence was, that though previously cases of typhus were admitted with impunity into the wards, and never spread either to their attendants or to other patients, now, when the ward contained few besides the fever patients, some of those few, and several of the nurses, and others, took the disease ; nor did it cease to spread till the cases were again distributed through the different wards of the hospital. The case (and there were many others like it) was the more important as proving the evil consequences of establishing hospitals for the admission of fever patients only, or for any class of contagious diseases. The history of the London Fever

Hospital afforded abundant proof not only of the contagious nature of typhus, but of the ill consequences of bringing together a crowd of patients affected with it. Scarcely a person in that establishment had escaped having fever ; whereas in ordinary hospitals it was only very rarely that the disease spread either to the other patients or to the attendants.

Mr. Hawkins would mention one fact to illustrate how difficult it is to obtain complete evidence in questions of this kind. When he was a lecturer on anatomy, six of his pupils, all residing in different parts of London, were at one time seized with small-pox, yet none of them had any idea where he had been exposed to the contagion. The fact was, a body of a person who had died of small-pox had been brought for dissection, and he had had it put in a room through which these among other pupils had occasion to pass. None of them, however, knew of the body being there, and two of them had only once passed through the room in which it lay. One of them in passing through felt a distinct rigor, and became ill almost directly afterwards ; but had it not been that he was himself acquainted with the common source of the contagion which afflicted them all, all these persons would certainly have referred their disease to some wrong cause. He had little doubt that in many cases similarly imperfect observations were made the basis of conclusions regarding the contagiousness and non-contagiousness of diseases.

Dr. Truman spoke in favour of the maintenance of the quarantine laws, which he thought were now more than ever necessary, when the passage from infected countries was made so much more rapidly by steam than it had ever before been. The very circumstance of there being a difference of opinion respecting the contagion of the plague was sufficient evidence of the necessity of caution. There were, no doubt, defects in them, but it would be better to remedy these than to do away with the laws altogether.

Dr. Gregory said, the arguments used against the contagion of the plague would exactly apply, *mutatis mutandis*, to the small-pox. When the French hospitals, in 1839, contained numerous cases of small-pox, and it did not spread to patients lying in the same wards, the non-contagionist might say there was evidence there that the disease never spread by contact ; and now, when there was hardly a case of small-pox in London, he might in the same way urge the absurdity of thinking the disease contagious when it had almost ceased to be communicated. At present, of the three or four cases in the Small-pox Hospital, not one had communicated the disease

to any other member of his family. All these were circumstances similar to those by which the opinion that the plague is not contagious were supported; yet surely no one would on such grounds as these deny that small-pox is contagious, when thousands of facts, on the other side, prove that it really spreads by contact.

Dr. Webster, Mr. Arnott, and Dr. Weatherhead, spoke briefly in favour of the doctrine of non-contagion, and of the propriety of abrogating the quarantine laws, their chief argument being that a truly contagious disease could not have remained so long limited to a particular region.

### THE MEDICAL ASSOCIATION OF THE NORTH OF ENGLAND.

THE annual meeting of this institution was held on Tuesday last, in the lecture-room of the Literary and Philosophical Society, Newcastle-upon-Tyne. There was a large attendance of the members, and there were also several non-professional gentlemen present; the meetings of the North of England Medical Association being open to the public.

Dr. Headlam, the President, having taken the chair, addressed the meeting in a neat speech, in which he congratulated the members on the flourishing state of their association. He then proceeded to speak of medical reform, and expressed his fears that the Bill of Sir James Graham would not be all that could be desired. He apprehended that the mover was too much under the influence of the corporate bodies. But, continued he, "let the subject be once brought fairly and authoritatively before Parliament, and a full discussion take place, and a measure founded on truth and justice must prevail."

Mr. C. T. Carter, Hon. Secretary, read the Report of the Council, as follows:—

The council, in presenting a report of their proceedings during the past year, have sincere pleasure in being able to congratulate the members of the North of England Medical Association on its prosperity, and on the steady support of the profession which it continues to receive. They hope that the statement they have now to submit to this meeting, will show that they have not been unmindful of the trust confided to them, and that during their term of office they have been anxious to promote, to the utmost of their power, the several designs for which the Society was established; and, in particular, that the primary object of the Association—namely, that of cooperating with other professional bodies in the endeavour to obtain an amendment in the laws and institutions connected with the medical profession in Great Britain and Ireland—has not been

disregarded. The Council have taken every opportunity of advocating the claims of the profession to the notice both of the government and the legislature.

The Report adopted at the anniversary meeting held in April, 1841, was printed and extensively circulated. The petitions in favour of medical reform, and for an amendment of the system of parochial medical relief, were duly presented to the House of Commons; all the members of Parliament connected with the counties of Northumberland, Durham, and Cumberland, and several others, having at the same time been requested to support the prayer of these petitions.

The circumstances attendant on the close of the session of parliament in June, 1841, having precluded the consideration of medical affairs by that parliament, the Council urged the members of the Association to impress upon candidates at the general election the importance of medical reform, as a question involving the welfare, not of the medical profession alone, but of society at large. They have reason to believe that many of our legislators are now alive to the importance of the subject. Many have pledged themselves to give it their serious consideration; and there is ground for hope, that when again introduced to the notice of parliament, it will not fail to meet with an adequate degree of attention.

The Medical Reform Bills which were promulgated during the last two years having been laid aside, your Council, unwilling that any relaxation should take place in the efforts of the reforming part of the profession, and desirous to gather as clearly as possible the sentiments of the Association upon the details of a plan for the better regulation of medical affairs, appointed, in the month of June, a Committee to consider the different plans which had been already produced, and to lay before the Council such suggestions as might occur to them in connection with their inquiry. After due consideration, the committee deemed it advisable to submit two outlines of plans; and upon the respective merits of these, the Council were desirous to take the sense of the members at their general meeting held at Durham in October last. The outlines were printed in the circulars which were sent to members previously to that meeting. It was, however, considered by the meeting unnecessary to decide upon them at that time; and recent circumstances, which will be more particularly adverted to in another part of this report, have arisen to obviate the necessity of bringing the plans under review at the present meeting.

In the month of July, Dr. Brown, of Sunderland, and Dr. Charlton, of Newcastle, were appointed a deputation to meet the



Provincial Medical and Surgical Association at York. The latter gentleman was prevented attending by a severe and protracted illness. Dr. Brown gave his support to the reform measures advocated by that association, and urged the propriety of a full and free cooperation of the different associated bodies, in furtherance of their efforts to obtain for the United Kingdom an amended system of medical polity. The unanimous thanks of the Council were given to Dr. Brown for his services.

At the general meeting in October a copious report was read of the transactions of the Council since their appointment in the month of April preceding. In this document, various points, illustrative of the existing state of the profession, were discussed. Other business of considerable interest occupied the attention of the meeting. A motion was made relative to the admission of non-medical gentlemen as honorary members of the association; a committee was nominated to report on the present mode of appointing medical and surgical officers to hospitals and other public charities; and a petition relative to certain alleged defects in the anatomy act was referred to the Council.

No steps have hitherto been taken in reference to the last of these subjects,—circumstances having arisen to induce a belief that the principal grounds of the complaint stated in the petition were likely to be removed. Should such, however, not be the case, the question might (with the sanction of this meeting) be again considered by the Council.

The propriety of admitting non-medical gentlemen as *honorary* members of the association has been discussed, and the *principle* of such admission acquiesced in by the Council. The regulations under which it would be proper to admit lay members have not been decided by the Council, and their further consideration will depend on the course which this meeting may think proper to take in regard to the proposition.

In the month of January, your Council prepared a memorial to the Secretary of State for the Home Department, relative to the present state of the medical profession—300 copies of which were printed for circulation. The memorial was transmitted to Mr. Hodgson Hinde, M.P. who, at the request of the Council, obligingly consented to place it in the hands of Sir James Graham.

As on former occasions, so also on the present, the Council have to state that, agreeably with one of the fundamental principles of the association, an active correspondence has been carried on, throughout the past year, with various medical associations, as well as with other parties who take an interest in medical reform. Amongst these may be mentioned the names of Dr. Kidd,

of Oxford; Mr. Carmichael, of Dublin; Dr. Barlow, of Bath; Dr. Hastings, of Worcester; Mr. W. Wood, of Edinburgh; Dr. Webster, of Dulwich; Mr. Ceely, of Aylesbury; Dr. Jeffreys, of Liverpool, &c. &c.

The Council have been glad to perceive, within the last few days, some indications of improvement in the system of Poor-Law medical relief. The Commissioners have lately issued a 'medical order,' the main features of which consist in the fixing a maximum of area and population for districts, and the institution of a permanent pauper list. The medical attendants are to hold office *permanently* instead of *annually*, and are to possess a double qualification in medicine and surgery. The system of "tender" is to be abolished, and an extra remuneration allowed for surgical operations and midwifery. The 'order' is of too recent date to admit of the Council giving an opinion upon its several heads in this Report. They would beg, however, to remark, that in defining the qualification of the medical officers, an unjust restriction has been placed on the graduates of Scotch and Irish Universities, and on the members of the Colleges of Surgeons of Edinburgh and Dublin.

After the strenuous exertions made in the cause of medical reform within the last few years, by a large proportion at least of the profession, it cannot be otherwise than gratifying to this and other kindred associations, to know that the subject has at length attracted the attention of Government. During the early part of the present session of Parliament, Sir James Graham, as numbers are well aware, announced his intention to bring into the House of Commons a Bill for the better government of the medical profession. The Council are not provided with an outline of the proposed measure, but the bare announcement that a medical bill is likely, at no distant period of time, to be introduced into the legislature by a minister of the Crown, affords a gratifying proof that the importance of the question of medical reform has been recognized in the proper quarter, and should act as a great encouragement to those parties who have toiled in the cause, to continue their efforts, showing, as it does, that their past exertions have been neither visionary nor fruitless.

The contents of the anticipated Bill have not yet been made known to the profession, although the heads of it are said to have been communicated to the authorities of the Colleges of Physicians and Surgeons of London. The Council are consequently not prepared to lay before this meeting any definite information respecting it. Rumours as to its provisions are not, however, wanting; and as these have, in certain quarters, been made with considerable confidence, they

must not be allowed to pass entirely unnoticed in this Report. The Council hope, at the same time, that the result may prove the said rumours to have been somewhat premature, and not altogether correct, and that a measure so little in accordance with the feelings and wishes of nearly the whole professional body, and of such questionable efficacy as regards the well-being of the community, as report has attributed to Sir James Graham, may not be brought into Parliament with the sanction of her Majesty's Government.

It is not to be supposed that a plan of medical reform can be acceptable to the profession which would concentrate the whole governing power of that profession (for England at least) in the Colleges of Physicians and Surgeons of London, even with such alterations in the constitution of those bodies as have been hinted at in connection with the reported arrangements. The well-earned unpopularity of these Colleges, their indifference to the general welfare of the profession, must be known to the Right Honourable Secretary for the Home Department, who was a member of Mr. Warburton's Committee on Medical Education, &c., in 1834; and surely it cannot be intended that they *alone* should furnish the elements out of which is to be constructed a Central Board or Council of Health; whilst the mass of English medical men—the general practitioners of the kingdom—are to have no voice in the election of a body to which is to be entrusted the entire management and control of medical affairs. Neither is it to be imagined that this numerous class will be contented that the licensing power—the power which gives them a legal recognition as practitioners of medicine—should be held by a corporation which is not deemed worthy to form a constituent part of the General Board of Management. If report be deserving of credit, the triple examination which, consistently therewith, the general practitioner is to undergo, by *physicians, surgeons, and apothecaries*, and the threefold nature of his professional duties, instead of entitling him to consideration, would be made the ground of his exclusion from all participation in the election of the General Council—this privilege being confined to those who *profess* to limit their practice exclusively to medicine or to surgery. The plan (as reported) does not aim at preserving that natural unity of the profession which has been so universally acknowledged in modern times. The most eminent members of the profession have agreed, that, up to a certain point (and that the commencement of their practical career), the education of the physician and the surgeon should be the same. No one will, in these days, be found to deny that the physician, although rarely

or never required to perform the *manual* operations of the healing art, should nevertheless understand both the theory and practice of surgery; and a knowledge of medicine is even still more indispensable to the surgeon, for it is notorious that the greater part of the practice of those persons who are designated pure or consulting surgeons, is in medical cases, and no man unskilled in medicine can hope to treat with success those diseases which are usually consigned to the surgeon: and yet, according to the reported ministerial plan of medical reform, no provision seems to exist for testing the medical knowledge of the surgical practitioner.

The inadequately protected condition of the qualified medical practitioner has long been a cause of complaint. His title has been usurped, his privileges have been trenched upon with impunity; and such is the anomalous state of medical government in this country, that whilst the impostor is allowed to reap an abundant harvest, the educated physician is unable to recover at law his charge for professional attendance. The protection now enjoyed by the licensed general practitioner, feeble and inefficient though it be, is to be exchanged, according to the reported Bill, for a mere *discouragement* of unauthorized practice. Public appointments are to be held only by the qualified members of the profession, and druggists, like physicians, are not to recover at law charges for medical advice.

The Council forbear to pursue this subject in the absence of precise data, and the foregoing observations must be distinctly understood as applying to the outlines of the Bill *imputed* to Sir James Graham by certain of the medical journals, and other portions of the public press. The Council hope that as the measure is not yet completed, and will not, in all probability, be brought forward during the *present* session of Parliament, the Right Honourable Baronet, in attempting to legislate on this momentous but difficult subject, will not permit himself to be swayed by any undue influence, but will summon to his councils parties from whom he is likely to receive a disinterested statement of the actual condition of medical affairs, and with whose assistance he may expect to frame a Bill which shall satisfy the reasonable demands of medical men, and be productive of beneficial consequences to the entire population of this great empire.

In the meantime, members of the profession must be vigilant and active; and in order to meet any emergency which may arise during the ensuing twelvemonth, your council have to recommend that this meeting do authorize their successors in office to act as circumstances shall require, in reference to medical legislation. They would urge the members of the Association, individually, to

impress upon members of Parliament the principles of reform which have been advocated by this and other associated bodies, and which have been approved and supported by some of the most distinguished ornaments of the profession: the principles, namely, of—1. A full and fair representation of the professional body in the government of the medical corporation, and in the appointment of the medical members of any general board or council which may hereafter be formed. 2. A uniform qualification as the requisite for a license to practise medicine, to which branch of it soever the licentiate may more *especially* direct his attention, and irrespective of any degree or title which he may desire to possess. 3. Reciprocal privileges for licensed practitioners throughout England, Scotland, and Ireland. 4. A protective power, both for the public and the profession, against spurious and unauthorized practitioners of medicine or surgery.

These principles, as your council have repeatedly endeavoured to explain, could be carried into effect without the abrogation of the existing orders of physician, surgeon, and general practitioner, and without any improper or unwarrantable interference with the rights and privileges of the universities and colleges of the United Kingdom. Their power to educate students, and to grant degrees and diplomas, they would still retain—subject, perhaps, to the control of a general board or council; and it would be most desirable that through the instrumentality of such a council, the conditions attached to the granting of degrees, diplomas, &c. should be assimilated throughout the three countries, so that the same title might indicate a *given* qualification, by whichsoever of the universities or colleges it should have been conferred. The propriety of such an arrangement has been recognized in a report published some time since by the Royal College of Physicians in London.

To obtain an improved system of government for the medical profession, is not by any means the sole object of this Association. The qualification of the legally-recognized practitioner, and the general direction of medical affairs, may be provided for by the State. The *social* well-being of the medical body, the maintenance of its honour and respectability, the promotion of kindly feelings amongst its members, must ever be in the hands of the profession itself. They are comprised in the scheme of this Association, and have not been overlooked by your council, although, from the peculiar position of public affairs, other objects have hitherto engrossed a larger and more conspicuous share of their attention. The comfort and happiness of the individual practitioner must always, in a great measure, depend on the existence of a proper understanding between himself and his professional

neighbours, as to the line of conduct by which they are to be guided in their intercourse with each other; and in a profession the members of which, perhaps, above those of any other, are apt to be thrown into collision, it is most desirable that on this point some clearly-defined principles should prevail, and should, moreover, be strictly observed. By no means can this end be so effectually accomplished as by a union of the practitioners of a given locality into a society or association. Such unions exist, and often with the most salutary consequences, in almost every class of the community: they are eminently deserving the support of medical men. The various ways in which they might be rendered conducive to the common welfare of the latter need not here be enumerated. It has long been the opinion of your council that this Association might be made subservient to their promotion; and in former reports the division of the Association into *sections* was strongly recommended. Under such an arrangement, each section might watch over the local interests of its members; while the interests of the Association as a body, and of the profession at large, would engage the attention of your council, and of members collectively, at their general meetings. The council cannot take their leave without repeating their recommendation in regard to this point; and they are happy to state that immediately subsequent to the last anniversary meeting, the members of the Association resident in Sunderland formed themselves into a section, which has held several meetings during the year.

On referring to the list of members it will be seen that several new and valuable names have been added during the past twelvemonth; but the council are at the same time compelled to express their regret that some of their earliest associates have left the Association, because the benefits which they had been led to expect as likely to result from its labours, have not been realized so speedily as they have desired. These gentlemen should have borne in mind that the purposes for which this Society was called into being are to be accomplished only by unwearied patience, by continued perseverance, by untiring industry. The movement of the Association may to some have appeared slow, and almost imperceptible; but the council are warranted in believing that they have not been wholly unappreciated by their brethren throughout the country. The success of the Association, and the extent of its usefulness, must obviously be commensurate with the degree of support which shall be given it by the medical practitioners of the northern counties of England; and where the individual contribution is almost nominal, it cannot but be a matter both of surprise and concern, that any member of the profession (admissible by its

rules) should withhold his aid from an institution whose designs are so excellent, and whose exertions are unceasingly directed to the fulfilment of noble and praiseworthy objects.

The report was unanimously adopted, after which a vote of thanks to the secretary was moved and passed by acclamation: after this Dr. Glover was called upon to read the report of the Committee on Medical Appointments to Hospitals and other Public Charities.

We can only make room for the conclusion, by which we find that, besides the abolition of canvassing, the only recommendations of the committee are two:—

"1. That the appointment should not be made for life, but for a term of seven years (as in Edinburgh), or other limited period. The appointment should then be renewable, but the office open to competition. Along with this, all the medical officers of infirmaries and dispensaries should be compelled to give clinical instructions where pupils are to be found.

"2. That no one be allowed to hold more than one infirmary and one dispensary appointment together.

"A notion prevails among the public, that the cultivation of medical science in public institutions is in some degree opposed to the welfare of the patients. This prejudice is entertained by people whose position should give them liberality of sentiment. It is clear that the more attention a medical man can be induced to bestow upon a case, and the more his treatment is subject to criticism, so much better will it be, on the whole, for the patient. Besides, the cultivation of medical science in an hospital, and the publication of new facts, may cause a thousand benefits, and lead to the alleviation of human suffering throughout the world, and for ages to come.

"Your committee are of opinion that, in the present stage of the inquiry, they cannot do more than thus report progress, and ask leave to make any communication to the Association which a more matured state of the investigation may render necessary."

After some discussion (a recommendation which the report contained of pure physicians and surgeons to hospitals having been objected to) it was carried by a shew of hands. After this some less important matters were disposed of, and the meeting closed with a vote of thanks to the President. The members afterwards dined together, and the evening passed off in the most satisfactory manner.

On the following day, the voting-papers, delivered at the business-meeting in the lecture-room, were examined by the scrutineers, and the election was found to have fallen on the following gentleman:—

*President.*—Dr. Headlam.

*Vice-Presidents.*—Dr. Brown, Mr. Baird,

Mr. T. M. Greenhow, Dr. Cahill (Berwick), Sir John Fife, Dr. Winterbottom (South Shields), Mr. Green (Durham), and Dr. Elliot (Carlisle).

*Treasurer and Secretary.*—Mr. C. T. Carter.

*Council.*—Dr. Charlton, Mr. Potter, Dr. De Mey, Dr. Knott, Dr. R. Elliot, Dr. Glover, Dr. Embleton, Dr. Cargill, Mr. Bennett, Dr. Fife, Mr. Tulloch, Mr. Dawson, Dr. Oliver, Mr. Dixon (Sunderland), Dr. Whight, Mr. Talmadge, Mr. Brumell, Mr. Mordey (Sunderland), Mr. Dodd (Sunderland), Mr. Gregory (Sunderland), Dr. R. James (Carlisle), Mr. Watson, Mr. W. K. Eddowes (South Shields), and Mr. Sang.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, April 16, 1842.

Small Pox .....	4
Measles .....	22
Scarlatina .....	11
Whooping Cough .....	36
Croup .....	12
Thrush .....	2
Diarrhoea .....	4
Dysentery .....	2
Cholera .....	0
Influenza .....	1
Typhus .....	21
Erysipelas .....	5
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	150
Diseases of the Lungs, and other Organs of Respiration .....	279
Diseases of the Heart and Blood-vessels ....	18
Diseases of the Stomach, Liver, and other Organs of Digestion .....	54
Diseases of the Kidneys, &c. ....	4
Childbed .....	6
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	4
Rheumatism .....	3
Diseases of Joints, &c. ....	4
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	100
Old Age or Natural Decay .....	61
Deaths by Violence, Privation, or Intemperance .....	9
Causes not specified .....	9

Deaths from all Causes ..... 823

### METEOROLOGICAL JOURNAL.

<i>April</i>	THERMOMETER.		BAROMETER.	
Wednesday 20	from 27 to 55		30.09 to 30.11	
Thursday . 21	29	55	30.10	30.07
Friday . . . 22	38	61	29.97	29.98
Saturday . 23	34	67	29.86	29.89
Sunday . . 24	33	67	29.89	29.93
Monday . . 25	38	66	29.98	30.02
Tuesday . 26	39	67	30.04	30.12

Wind variable, N.E. prevailing.

On the 20th and following day clear.—The 22d, morning overcast, otherwise clear. The 23d, morning and afternoon clear, evening overcast, distant thunder heard in the evening. The 24th, morning clear, otherwise cloudy, lightning and distant thunder, accompanied with rain in the afternoon. The 25th and following day, clear.

Rain fallen, 0.45 of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

THE  
LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL  
OF

Medicine and the Collateral Sciences.

FRIDAY, MAY 6, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

Delivered at King's College, London,

By DR. WATSON.

LECTURE LXXIII.

*Entozoa continued. Hydatids. Trichina spiralis. The Guinea worm. Strongylus gigas. Origin of Entozoa. Question of spontaneous generation. General symptoms of the presence of intestinal worms. Particular symptoms, and remedies, of the common round worm, of thread-worms, of tape-worms.*

At our last meeting I gave a summary description, sufficient however for our purposes as medical practitioners, of the five kinds of *vermes* which are most common in the human intestinal canal. There are yet a few more of these entozoa which are curious and interesting enough to deserve a brief notice.

*Hydatids*—animals like bags or bladders of water—are of very frequent occurrence in various parts of the body. They are also called *acephalocysts*, headless bags. These are not to be confounded with enlarged graafian or other vesicles, nor with morbid serous cysts in general. They look like, or rather they are, spherical sacs having one aperture only, and containing a thin colourless liquid. They are usually found congregated, sometimes in vast numbers, within a large cavity or cyst, to which they are unattached. This is a consequence of the peculiar manner in which the animals are propagated. The wall of the cyst is laminated, and the young hydatids bud forth from between its layers. In the species which infests the human frame, they are born into the cavity of the parent: in some other

species they are detached externally. We find therefore a parent bag, full of other smaller bags; which, again, are pregnant, as it were, with their own offspring, the grandchildren of the primary cyst: and so on, somewhat after the manner of a nest of pill-boxes. Minute in their origin, these parasites may thus increase and multiply till the original cyst attains an immense size, and at length destroys life by its bulk and pressure. Of course the immediate consequences of such pressure will depend greatly upon the parts occupied by the hydatids. You may readily imagine what kind of symptoms are likely to ensue when they are lodged within the abdomen, within the less yielding thorax, within the unyielding skull. They are more common in the liver than in any other single organ. A woman died recently in the Middlesex Hospital, whose liver contained thousands of these globular bodies. The enlarged gland had completely sealed up, by its pressure, a portion of the inferior cava.

We can seldom tell that hydatids exist in the body until we see them; nor, if we knew of their presence, could we propose any rational method of cure. It has been fancied that a galvanic current, or an electric shock, passed through the organ containing these creatures, might kill them, and so at least prevent their increase: or that they might be poisoned by drugs that are not seriously prejudicial to man, such as mercury or iodine. But these are mere dreams of our baffled art. They sometimes open a way for themselves to the surface; and escape through an ulcerated outlet: and sometimes they are let out, to the surprise perhaps of the operator, who only knew that he was dealing with an abscess which required puncturing. Mr. Arnott put a lancet into a fluctuating tumor in the epigastrium of one of my patients; very offensive pus issued, with the shrivelled skins of sundry defunct hydatids. The cyst was situated, I believe, in the liver. Although the orifice was slow to heal, the patient ultimately got well.



There are single cyst-like bodies, with short retractile necks, bearing the generic name of *cysticercus*. One species of this kind, the *cysticercus cellulose*, inhabits the interfascicular cellular tissue of the muscles. It is rare in the human subject, but frequent in the pig; giving rise to that condition of the muscles which is familiarly known as mealy pork. This is one of the internal parasites with which the organ of vision is liable to be infested. A most remarkable instance occurred a few years ago, in Glasgow. In the eye of a child, who had suffered repeated attacks of ophthalmia, Mr. Logan discovered one day, to his extreme astonishment, a semitransparent body, about two lines in diameter, floating unattached in the anterior chamber. It seemed almost perfectly spherical, except that from its lower edge there proceeded a slender process, of a white colour, with a slightly bulbous extremity, which appeared to be heavier than the globular part, for it was always turned downwards. This head, or neck, was seen to project or elongate itself from time to time; and occasionally it was drawn up and completely hidden in the cystic portion. When the patient sat still, in a moderate light, the animal covered the two lower thirds of the pupil. "Watching it carefully (says the gentleman who has recorded the case), its cystic portion was seen to become more or less spherical, and then to assume a flattened form; while its head I saw at one moment thrust suddenly down to the bottom of the anterior chamber, and at the next drawn up so completely as to be scarcely visible." The child's head was now turned gently back, and instantly the hydatid revolved through the aqueous humour, so that its head fell to the upper edge of the cornea, now the more depending part. Upon the child again leaning forwards, it settled, like a little balloon, in its former position; preventing the patient from seeing objects directly before her.

The animal was carefully watched for three weeks; and no other change was noticed than a slight increase in the bulk of its cystic portion. In six weeks it had evidently grown bigger, the eye become injected, and the iris less free in its movements; and pain ensued. Extraction of the hydatid was attempted; but the patient was unruly; the lens was forced out, and the animal ruptured and expelled in shreds: the iris became entangled in the wound of the cornea, and vision in that eye was spoiled.

There is a very singular microscopic parasite, the *trichina spiralis*, dwelling in myriads, sometimes, in the muscles of the living human body. It was first described by Professor Owen in 1835. Mr. Wormald, the Demonstrator of Anatomy at St. Bar-

tholomew's Hospital, sent to that gentleman a portion of human muscle, which presented a singular speckled appearance, as if it were mouldy. Mr. Owen found that each speck was a shuttle-shaped cyst, containing a very minute cylindrical worm, coiled up in two, or two and a half, spiral turns. The worm measures, when unrolled, no more than  $\frac{1}{10}$  of an inch in length, and  $\frac{1}{80}$  of an inch in diameter; and of course requires, for a satisfactory examination, to be seen through a microscope. The longer axis of the containing cyst lies between, and parallel to, the fibres of the muscle. Fourteen similar instances have since come to Mr. Owen's knowledge.

This is a very strange kind of parasite. One would imagine that the presence of innumerable living beings, in or between the muscular fibres, would be likely to give rise to symptoms. We might expect pain, or muscular debility, or embarrassed movements; yet no indication of the presence of these worms seems to have been afforded in those instances in which the condition of the subject in whom they were found was known, during life. The principal points that have hitherto been made out appear to be the following:—

1. The muscles thus beset with parasites are the voluntary muscles: and those which lie superficially are fuller of the worm than the deeper seated. The pectoralis major, latissimus dorsi, and other large flat muscles, usually present them in great abundance. They have been detected in the muscles of the eye; and even in those belonging to the little bones of the ear, and of whose actions we are wholly unconscious. They occur also in the diaphragm, in the muscles of the tongue and of the larynx, in those of the soft palate, in the constrictors of the pharynx, in the levator ani, in the external sphincter ani, and in the muscles of the urethra. They have not yet been seen in the muscular tunic of the stomach and intestines, in the detrusor urinæ, or in the heart. Mr. Owen makes this interesting remark—that all the muscles infested by the trichina are characterized by the striated appearance of their ultimate fasciculi: whereas the muscles of organic life, which the animal does not inhabit, have, with the exception of the heart, smooth fibres, not grouped into fasciculi, but united reticularly.

2. It appears, also, from what has been hitherto observed of these entozoa, that their presence in the body is unconnected with age, sex, or any particular form of disease. They have been concomitant with cancer of the penis, tubercles of the lungs, exhaustion of the vital powers by extensive ulceration of the leg, fever combined with pulmonary phthisis, aneurism of the aorta, sudden depression or collapse after a comminuted

fracture of the humerus, diarrhoea. They have also been met with in the muscles of a man who, while in the apparent enjoyment of robust health, was killed by a fracture of the skull.

The *Filaria Medinensis*—*Dracunculus*—or *Guinea-worm*—has its residence in the subcutaneous cellular tissue. It is a long, slender, round, uniform animal, like a fiddle-string, or a piece of bobbin; as you may see in the specimens before you. Its length varies from five or six inches to twice as many feet. Men's lower limbs, their feet and legs, are the parts most commonly possessed by this worm; but it occurs also in the scrotum, in the parietes of the belly, in the arms, beneath the conjunctiva of the eye, and in almost every superficial situation. It is sometimes solitary; but several may coexist or succeed each other in the same individual; nine or ten perhaps. A Dr. Marradri, a friend of the celebrated Clot Bey, had suffered from 28 of them in succession.

This entozoon is endemic in the hot inter-tropical regions; in Asia and Africa; upon the coast of *Guinea*, whence its trivial name. It sometimes abounds after the manner of an epidemic. Sir James M'Grigor tells us that the 86th and the 88th regiments, stationed at Bombay, were much plagued by this pest. The 86th was free from it upon entering the fort, in September 1799; and so continued till the setting in of the monsoon in 1800. In the course of the monsoon nearly 300 of the men were attacked. The 88th regiment relieved the 86th. No case of Guinea-worm appeared among them for nearly a month after their coming into the barracks in Bombay, in October, 1800. In the latter end of November, they embarked for the Egyptian expedition; and in the course of the voyage, in one ship alone 199 men out of 360 were crippled and laid up with this loathsome disease. It was thought to be infectious. The artillery-men, who were kept separate, escaped. Of 181 instances, of which Sir James M'Grigor gives a tabular account, the feet were the parts affected in 124.

These animals sometimes remain for a long while in the cellular tissue without producing inconvenience, and therefore without betraying their presence. Hence they are sometimes brought over to this country. The great navigator, Dampier, had no symptom of a Guinea-worm which he carried about with him, until about half a year after he left the place in which he contracted it. Sometimes the parasite is quiet and harmless for a still longer period; in one recorded instance it was latent and dormant for three years.

The symptoms which do at length arise are the following: itching of the part affected; a sensation as if there were some-

thing creeping under the skin; sometimes a cord-like ridge can be felt in the track of the worm: at length a vesicle, or a pustule, or a little boil forms, from which, when it breaks, the head of the animal protrudes. This process is often attended with fever; and in certain parts of the body the local suffering is considerable: the cellular tissue sloughs; and sometimes dangerous hæmorrhage occurs.

The only treatment which these cases appear to admit of, is the gradual and careful extraction of the worm. Lest that part of it which already protrudes should recede, or be broken, it is gently wound, day by day, round a small stick, or a little roll of adhesive plaster; pains being taken not to pull upon it so much as to risk its being torn asunder. The roll is protected by a bandage. Whenever, by accident, the animal is broken, very serious consequences are said to ensue; violent inflammation of the part, abscesses and sinuses, and high irritative fever. This mischief is ascribed by some to the presence of dead animal matter, by others, of young filarise, in the subcutaneous tissue: for I should have mentioned that the Guinea-worm is viviparous; and although neither digestive organs nor generative organs have yet been discovered in its structure, it is sometimes found stuffed internally with a countless offspring. The extraction is tedious work. Where, indeed, the cellular tissue is very loose, as in the scrotum, the worm is occasionally drawn out at the first attempt: but the process sometimes occupies weeks; and its average period appears to be not less than ten days. When the course of the animal is quite superficial and obvious, the natives are accustomed to make an incision in the skin, at about the middle point, and to pull the worm through from both ends. When once it is out, the parts presently heal. All other medication (and much has been tried) has been found useless; except, perhaps, the administration of assafoetida: and that not as a means of cure, but of prevention. It is said that the Brahmins in India, who are in the constant habit of using this drug, are exempt from attacks of the dracunculus. Cleanliness was also found, in the army, to be a considerable protection.

There is a species of filaria peculiar to the eye; and another to the bronchial glands: but these are extremely rare.

The urinary organs have their parasites also: of which I shall specify but one, and that chiefly on account of its strange lurking-place, and remarkable size. I allude to a species of strongle which sometimes occupies the human kidney, and which is no uncommon tenant of the same organ in various animals; the horse, the bull, the dog, the wolf, the polecat, and the otter. In the

human subject its length varies between five inches and a yard, and it is sometimes half an inch in diameter. There is a specimen nearly of that size in the Hunterian museum. It may well be called the *giant* strongle, *strongulus gigas*. Fancy a creature as big as a snake coiled up in one's kidney. It gives rise to no distinctive symptoms, although, as you may suppose, it causes much renal distress; hæmaturia, retention of urine, and great suffering in its passage out of the body, either through the natural urinary channels; or by abscess and ulceration through the back.

With respect to some, at least, of the parasitic animals that I have been describing, those I mean which are found shut up in close chambers, our first feeling is that of wonder how they came there. Into all parts from which a road is open to the external surface, we can conceive that living creatures may enter, or their eggs be carried. But how can either animals or ova find their way, unperceived, into the substance of the liver and of the voluntary muscles, into the eye, into the brain? The whole matter is obscure, yet interesting.

It was the opinion of Linnæus, and of other natural philosophers of his time, that the *intestinal* worms were really terrestrial or aquatic animals which had been accidentally swallowed, either while young and small, or in the antecedent state of ova. It was even pretended that these animals had been recognized and detected out of the body, in stagnant waters. But later enquirers, especially Bremser and Rudolphi, have completely disproved this notion. After dedicating twelve years of his life to the observation and study of entozoa, Bremser was satisfied that no creatures identical in structure with the intestinal worms are ever met with out of the body, except such as have come from the intestines of man, or of some other animal: and conversely, that no terrestrial or aquatic worms are ever found living within the bodies of men or of animals, unless they have been directly and plainly received from without.

But, then, is it not possible that, as Boerhaave supposed, aquatic or terrestrial reptiles, casually entering the body from without, being placed under entirely new and unnatural conditions, may have attained a monstrous growth, and undergone metamorphoses such as we know that some of the lower animals, by change of circumstance, do undergo; as the tadpole becomes a frog, the maggot a butterfly?

To the reception of this theory there are strong grounds of objection. First, there is no ascertained relation (as in the other cases) between the structure of intestinal worms, and of animals having an independent ex-

istence out of the body: and they are never caught (as they would surely sometimes be) in the transition state—the intermediate condition. Secondly, opposed to this “accidental” hypothesis are also the facts that certain species of worms infest certain species of animals only: that in the same animal different species of worms occupy (as we have seen) special parts of the alimentary canal; have each their peculiar habitat: that worms and animals of external origin mostly die as soon as they are received into the digestive organs; while the true intestinal worms perish whenever they are delivered therefrom. Thirdly, the circumstances that these worms not only live but breed within the human bowels, and that they are met with even in the intestines of the unborn foetus, are very adverse to this theory of an accidental *error loci*.

But, to give up the notion of a metamorphosis, may not intestinal worms spring from specific germs or ova introduced from without, not casually, but in accordance with a natural law: germs or ova which find in the interior of living bodies the only conditions that admit of their development, the only soil in which they are capable of germinating, the only nest in which they can be hatched? I confess that such is my own belief. We have something like this at least in that common affection of horses called the “bots.” A species of æstrus or gadfly deposits its eggs upon the animal's hide, where they cause, I presume, some irritation, which induces the horse to lick that part with his tongue. The eggs are thus conveyed into the mouth, whence they reach the stomach. There they are converted into larvæ, and affix themselves to the parietes of the stomach. At length, when they are ready to undergo their final metamorphosis, they are detached from the interior of the stomach, pass along with the food and fæces through the intestines, and are ejected from the rectum with the dung.

Why, it is asked, may not similar phenomena take place in the human body? There can be no doubt that we every day swallow, inadvertently, numerous ova, of various kinds. It is supposeable enough that sometimes the digestive organs may, and sometimes they may not, have the power of decomposing or expelling these ova.

It is quite certain that what are generally called *spurious* worms may have that mode of origin in the body. Thus, Dr. Elliotson states that he had once a patient, an infant, who discharged from the bowels a dozen live larvæ, or maggots, of the common fly. The child had eaten part of a *high* pheasant some months before. This circumstance was instructive in that case. The infant had been suffering under a chronic cough, but as

soon as those larvæ were got rid of, the cough ceased. Dr. Elliotson says that he saw them in the napkin, moving about in the fæcal matter, just as they might have done if they had never been in the child's body. The same physician tells us that he has twice known, in two different patients of his, a living caterpillar to be discharged from the intestines. One of the patients was a woman who had been in the habit of eating cabbage stalks while she was washing them for the pot. The moth lays its eggs on cabbages, and she no doubt had swallowed some of them, and one had hatched within her. In the ninth volume of Dr. Duncan's *Medical Commentaries* is a precisely similar case. A boy, after a dose or two of calomel and jalap, discharged from the rectum very many caterpillars, all alive, and full of activity. He had been in the habit, when in the garden, of eating young cabbage leaves. Till this habit began he had enjoyed good health. While the animals were within his bowels he suffered severely; had locked jaw; and fell into a state resembling coma. Upon their expulsion he recovered perfectly. Centipedes have in like manner been vomited, and voided from the bowels. But the most wonderful instance of this kind that ever was heard of, is related by Dr. Pickells in the *Transactions of the King and Queen's College of Physicians in Ireland*. A young woman, of melancholic disposition and chlorotic appearance, had been in the daily habit, from some superstitious motive, of drinking water mixed with clay taken from the graves of two priests who lived and died in the odour of sanctity. In this way she probably imbibed the ova of the insects which subsequently issued from her body. In about three years and a quarter, she discharged, partly by vomiting, but chiefly *per anum*, upwards of 2000 beetles, and their larvæ, most of them alive. Dr. Pickells counted more than 1300. Larvæ, and pupæ, and perfect insects, all came forth simultaneously. Some of them ran off, as soon as they were vomited, into holes in the floor; and two large-winged insects were so lively and vigorous, as immediately to fly away. These strange births were preceded and attended by a complicated and distressing train of symptoms; a gnawing, and sense of something creeping at the pit of the stomach, vomiting of blood, amenorrhœa, hysterical convulsions, headache, retention of urine, and sometimes a degree of mental derangement. She was at length freed from this disgusting malady by large doses of the oil of turpentine.

These spurious worms differ from the true intestinal parasites in this—that the human alimentary canal is not their *only*, but their accidental and unusual nidus. Nevertheless, their occasional presence, alive, in that place,

adds to the probability that some of the entozoa may be originally ectozoa.

The main difficulty, however, respects those animals which occupy shut cavities within us, or are imbedded in our solid organs: and this difficulty forms one avowed ground of the theory of *equivocal generation*; which means the spontaneous production of living creatures, independently of any germ, or egg, or parent. The vulgar suppose that dirt engenders fleas, that maggots result from the putrefaction of flesh, that eels arise, of themselves, in and out of mud. In other words, they infer the spontaneous origin of those creatures, of which they cannot or do not trace the procreation by pre-existing parents: and philosophers and men of science have done the same. They will not believe that which they cannot see. Now this doctrine of equivocal generation shocks, I confess, my mind, and offends my reason. If well founded, it strikes at the root of that great argument of Natural Theology, which deduces the existence of a First Intelligent Cause, from the marks of adaptation, design, and contrivance, so manifest throughout the visible universe. Observe the demand which this doctrine makes upon our faith. In defiance of all experience and analogy in respect to creatures which our finite senses are competent to examine, it calls upon us to believe that living beings of complex and intricate, yet definite and harmonious structure; provided with a digestive apparatus, with instruments of locomotion, with generative organs; of various species; in many instances of separate yet answering sexes; that not one or two of these beings, nor a pair or two, but beings and pairs innumerable, are daily formed by the blind concurrence of "organic molecules." The obscurity that hangs over the origin of the entozoa is not indeed the only, nor I think the chief ground upon which the notion of spontaneous generation rests. You are probably aware that minute animalcules, so minute that most of them cannot be seen without a microscope, soon become abundant in water wherein vegetable or animal matters have been dissolved by infusion. Such animalcules are therefore called *Infusoria*. How do they come there? There are two suppositions open to us. One is, that they are formed by the fortuitous union of organic atoms contained in the infusion. The other is, that they proceed from ova or germs existing in the liquid, or floating always in the atmosphere, and ready to quicken whenever they light upon their proper element. That the ova of animals which are themselves visible only by the aid of a microscope, should be absolutely invisible by us, is not surprising. We may conclude that the latter supposition is the most true, if we can show that when these ova or



germs are excluded, all the other conditions of the production of infusoria being present, no animalcules appear. Now Spallanzani long ago found, by careful trials, that no animalcules were discoverable when the access of air to the infusion was completely prevented. But it has been objected to his experiments, that the presence of atmospheric air may be one of the essential conditions upon which the requisite combination of the organic molecules depends. Air, solar light and heat, and organic matters in solution being given—does animal (or even vegetable) life ever result? That is the question. The experimentum crucis has been made, and has answered “no,” as I have lately learned from one of Professor Owen’s admirable introductory lectures; by whom, I am glad to find, this uncomfortable doctrine of equivocal generation is strongly discountenanced. The experiment to which I refer was conducted by M. Schulze, of Berlin. I will read you his own account of it, as I find it recorded in the *Edinburgh New Philosophical Journal*.

“The difficulty to be overcome consisted in the necessity of being assured, first, that at the beginning of the experiment there was no animal or germ capable of development in the infusion; and secondly, that the admitted air contained nothing of the kind. For this purpose I filled a glass flask half full of distilled water, in which I mixed various animal and vegetable substances; I then closed it with a good cork, through which I passed two glass tubes bent at right angles, the whole being air-tight. It was next placed in a sand-bath, and heated until the water boiled violently, and thus all parts had reached a temperature of  $212^{\circ}$ . While the watery vapour was escaping by the glass tubes, I fastened at each end an apparatus which chemists employ for collecting carbonic acid; that to the left was filled with concentrated sulphuric acid, and the other with a solution of potash. By means of the boiling heat, every thing living, and all germs in the flask or in the tubes, were destroyed; and all access was cut off by the sulphuric acid on the one side, and by the potash on the other. I placed this easily moved apparatus before my window, where it was exposed to the action of light, and also, (as I performed my experiment during the summer) to that of heat. At the same time I placed near it an open vessel, with the same substances that had been introduced into the flask, and also after having subjected them to a boiling temperature. In order now to renew constantly the air within the flask, I sucked with my mouth, several times a day, the open end of the apparatus filled with solution of potash; by which process the air entered my mouth from the flask through the caustic liquid, and the atmospheric air

from without entered the flask through the sulphuric acid. The air was of course not at all altered in its composition by passing through the sulphuric acid in the flask, but if sufficient time was allowed for the passage, all the portions of living matter, or of matter capable of becoming animated, were taken up by the sulphuric acid and destroyed. From the 28th of May till the beginning of August, I continued uninterruptedly the renewal of the air in the flask, without being able, by the aid of the microscope, to perceive any living animal or vegetable substance, although during the whole of the time I made my observations almost daily on the edge of the liquid: and when at last I separated the different parts of the apparatus, I could not find in the whole liquid the slightest trace of infusoria, of confervæ, or of mould. But all three presented themselves in great abundance a few days after I had left the flask standing open. The vessel which I placed near the apparatus contained, on the following day, vibriones and monads, to which were soon added larger polygastric infusoria, and afterwards rotatoriae.”

This experiment confirms the belief which various other facts had suggested—that the different kinds of entozoa are not parentless animals, and that they somehow find their way into the body they inhabit from without. The lowest of the infusoria are of fixed and determinate species; and Ehrenberg states that even the minutest monads possess a complicated organization. It may be asked, concerning both them and the entozoa, why, if they ever arise spontaneously, should they be furnished with a generative apparatus? Again, some of the entozoa abound in certain places, and strangers coming to those places appear to contract them there. The dracunculus was thought by the soldiers in India to be communicable from person to person, as the itch insect, and the chigoe, to both of which it has some analogy, certainly are. The infant filaria probably creeps in through the skin without causing any noticeable pain. Even that monster among the entozoa, the tape-worm, invades the bodies of those persons who visit the countries to which it belongs. I told you before that, when tape-worm occurs in Germany, it is almost always the *tænia solium*; when in Switzerland, almost always the *tænia lata*. Now the celebrated Soemmering was afflicted by one of these beasts; and he was by birth a German: yet the worm that he voided was of the foreign species, the *tænia lata*. He had resided, however, for some time in Switzerland; and there, we can scarcely doubt, he caught the ovum, or the young one, of the parasitic animal. Mr. Abernethy once told me the following curious story:—A shepherd had to drive a flock of healthy sheep to a distant part of the



country. The journey occupied two or three days. On the road one of the animals broke its leg, and was carried the rest of the way on horseback. All the flock, except this hurt individual, was turned for one night into a marshy pasture. The broken limb was set, and the patient got well; and was the only one of the whole flock that did not subsequently become affected with the rot; the only one that escaped having flukes in its liver. Is it not presumable that the ova of these parasites were swallowed with the herbage cropped by the sheep in the damp meadow? The germs of the entozoa which dwell in closed chambers, and within the solid viscera of the body, are probably carried thither by the blood.

Upon the whole, we may reject the hypothesis of equivocal generation, and fall back upon the Harveian axiom, taken in its most extended sense, of *omne vivum ex ovo*. If I have digressed somewhat in order to set before you the grounds of my own belief in this matter, the interest and importance of the subject must be my excuse.

What I have further to say will relate exclusively to the intestinal worms of the human body: their predisposing causes; the symptoms they occasion; and the modes of getting rid of them.

However much we may be in the dark as to the exact mode in which these parasites reach their habitations, we do know *something* of the circumstances that appear to favour their production and multiplication. They certainly prevail *most* in persons who, from whatever cause, are weak and unhealthy; and particularly in scrofulous children. There are, however, many exceptions to this: they are not uncommon in individuals who are robust and vigorous. Intestinal worms, of all kinds, are more abundant in some situations than in others; especially in places that are low and moist. They are accordingly very frequent in Holland, and in some parts of Switzerland. Wherever there is much debility of the digestive organs—in leucophlegmatic habits—in persons who secrete habitually a large quantity of mucus—worms are apt to congregate. The children of the negroes in the West Indies are wonderfully infested by them.

It more concerns us to enquire into the general symptoms, through which the existence of worms in the alimentary canal may be ascertained, or suspected.

Those symptoms are very multifarious; and, for the most part, very equivocal. I know of none that can be reckoned certain or pathognomonic, except the actual appearance of one or more of the animals, or of portions of them, in the excrements of the body. Yet that they do give rise to a variety of morbid phenomena—which morbid phenomena are, however, liable to be pro-

duced by other causes also—there can be no question.

The most common of these are well known to all nurses and old women: such as colicky pains, and swelling of the belly; picking of the nose, in consequence of itching and irritation there; itching of the fundament; a foul breath; grinding of the teeth during sleep; a variable and capricious appetite, sometimes voracious and insatiable, sometimes none at all; and irregular bowels.

Worms sometimes give rise to strange, and even severe, *nervous* symptoms, explainable upon the principle of the reflex office of the spinal cord. We conclude that the symptoms are owing to worms in such cases, because they cease when the creatures are got rid of. Some examples of this I have already noticed. Thus Dr. Elliotson's infant patient lost a chronic cough upon the expulsion of the live larvæ of the common fly. Bremser gives a very similar case. A child of eleven, afflicted with tænia, had a troublesome dry cough. It was observed that the cough was suspended for two months, just after a very large portion of the worm had been brought away by anthelmintic medicines. This kind of coincidence happened, not once only, but three or four times; and at length, when the whole of the worm had come away, the cough was permanently cured. I mentioned, some time ago, the frequent association of intestinal worms with epilepsy, which is then of the eccentric form: and I stated that a certain nobleman voided some kind of worm (a tapeworm I think) from his bowels, and was thenceforward free from epileptic fits, under which he had long laboured. A curious circumstance, illustrating the fact that irritation of the mucous membrane of the alimentary tube may affect distant parts, is quoted by Dr. Joy from Albinus. A soldier received a wound, which led to the formation of an unnatural anus, in front of the abdomen, and in the track of the colon. Through this opening the mucous membrane of the bowel sometimes protruded; and whenever it was out, and exposed to the contact of cool air, the patient began to cough; and continued to do so till the mucous surface was warm again. Partial palsy, amaurosis, aphonia, and other nervous symptoms, occasionally depend upon the presence of worms in the intestines.

But let us examine into the symptoms which are more or less proper to particular species of intestinal entozoa; and into the treatment which they severally require.

A variety of symptoms are ascribed to the *ascaris lumbricoides*. Dr. Baillie says that the most characteristic are a tumid belly, emaciated extremities, offensive breath, and a deranged appetite. To these may be added colicky pains of the abdomen. When these animals get out of the small intestines, and

ascend into the stomach or œsophagus, they may occasion pain, nausea, vomiting, even convulsions. They have caused death, as I mentioned before, by crawling into the biliary ducts, and into the chink of the glottis. Sometimes, on the other hand, they emerge, unexpectedly, from persons who had received no previous notice of their presence.

This, the commonest parasitic tenant of the human bowels, is also a troublesome one to eject. A great variety of anthelmintics have been cried up as successful against it; but brisk purgatives, and bitter medicines in the intervals, have the best evidence in their favour. These animals seem not to like steel; and my own plan of assailing them is that of purging the patient from time to time by calomel and jalap, and administering, three times a day, some preparation of iron; the sulphate, or the muriated tincture. I believe that most of the patent worm medicines consist of mercury, jalap, and scammony, given in strong doses. The foetid drugs, assafoetida, galbanum, valerian, are often given. Cowhage also, the *dolichos pruriens*, which is supposed to tease the skin of the parasite no less than that of the human worm; and tin-filings, which are thought to bruise or lacerate the offenders, are favourite remedies with some persons. I have never tried them. The oil of turpentine I have not found so successful in expelling this species of *ascaris* as I shall presently show you that it is against the tape-worm. Croton oil has been much commended, either given by the mouth or rubbed upon the abdomen. Common salt, coloured by cochineal, and exhibited every morning in half-drachm doses, was found by Dr. Rush to be very successful.

The symptoms produced by the *ascaris vermicularis* are itching and irritation about the anus, especially in the evening, and aggravated by the warmth of the bed, and by whatever overheats the body. I would refer you to a paper by Dr. Heberden on this subject, in the first volume of the *Medical Transactions*. The case he describes is the more valuable, as it was related to him by a *physician* who was all his life plagued by these thread-worms. Generally, however, they infest children; and become fewer, and at length disappear, as childhood passes into youth. When they do accompany life through its several stages, although they are a source of serious annoyance and suffering, they do not appear to shorten the duration of the patient's existence.

To introduce at one end of a tube, several yards long, substances which are intended to act upon animals that live quite at its other end, would be a very round-about course. Whether a purgative effect, or a specific destructive effect, be the object, enemata are

preferable to medicines given by the mouth. *Bitters* offend and destroy these little worms. I have relieved many patients from their tormentors by prescribing simply the infusion of quassia as an injection. Tobacco clysters are praised; but the remedy is a hazardous one. Dr. Darwall says of an enema composed of half an ounce of the muriated tincture of iron mixed with half a pint of water, "there are few cases so obstinate that this will not suffice to overcome." Lime water, injected into the rectum, forms another effectual remedy for *ascarides*, and (as pharmacologists love to speak) a rather *elegant* one.

Thread-worms may be scooped out of the rectum, with the finger. Old women fish for them with a piece of fat meat, or a candle, wherewith the entangled worms are drawn out of the bowel. Perhaps, in troublesome cases, the plan laid down by Martinet is as good as any. He recommends three successive injections: the first merely purgative; the second specific (common salt in solution, cold vinegar and water, lime water, some bitter infusion); the third, oleaginous and soothing. Oil often allays the itching. This teasing symptom may sometimes be quieted by applying a towel wetted with cold water, to the fundament, while in bed.

With some means of this kind for expelling the worms, appropriate measures should be combined for improving the general health.

I know of no signs by which the presence of the *tricocephalus dispar* is revealed; and I am equally ignorant of any remedies for it.

That a *tape-worm* is within, we know when joints of it are voided. Numberless symptoms have been ascribed to this huge internal parasite. The following are probably the most distinctive. Uneasy feelings in the epigastrium, which often abate or are removed by eating; the appetite generally craving, but sometimes bad; itching of the nose and of the anus; nausea; colic; giddiness; a sour breath. Less frequently loud borborigmi occur; and sometimes convulsions.

Louis has watched and recorded, with his accustomed minuteness, the symptoms of ten cases, in the wards of La Charité. Seven of the patients were males, and three females. The youngest was a boy of 12, the son of another of the patients; the oldest was 74. Most of them were in comfortable circumstances, and had been habitually well fed. The greater number of them had for some time been passing fragments of tape-worm, with their stools, in their clothes, and in their beds. In one of the cases the articulations had been twice only detected in the stools, and each time upon the operation of a purgative.

In all the patients but two, the other symptoms commenced when the evacuation of the fragments commenced. This renders it probable that the worms begin to give annoyance when they get into the large intestine. The temporary relief that results from the expulsion of portions of the animal strengthens that supposition. The case is mentioned in the *Medico-Chirurgical Journal* of a man who was in the habit of freeing himself of large fragments of tapeworm by introducing a stick into the rectum, and twisting the worm round it till it broke.

The chief symptoms observed in Louis's cases were colicky pains of the abdomen; itching of the anus, and of the end of the nose; uneasiness of the epigastrium; and deranged digestion and appetite.

Pain in the abdomen occurred in *all* the instances: but it differed in different cases, both in degree and in kind. It was intermittent; and mostly felt towards the flanks.

There was itching at the margin of the anus in seven of the ten cases; itching of the nose in four. With one exception only, itching was present in one or the other, or in both of these situations.

The appetite was craving in one patient; unaffected in four; variable or bad in all the rest. In all, slight emaciation was observed. In all, the pupil of the eye was of its natural dimensions. This is noticed, because dilatation of the pupil has been set down as one of the symptoms of *tænia*.

Louis thinks that the following combination of symptoms indicates with tolerable certainty the presence of some kind of worm in the intestines. Pain in the belly; colic of various degrees of intensity, unaccompanied by diarrhoea; itching about the anus, and at the end of the nose. If pains in the limbs, lassitude, and nervous symptoms exist also, the diagnosis is strengthened.

We have a very effectual remedy for *tænia*—at any rate for the tapeworm of this country—in oil of turpentine, given in large doses. The anthelmintic virtues of this substance were not generally known till a paper on the subject, by Dr. Fenwick, of Durham, was published, in 1811, in the *Medico-Chirurgical Transactions*. A sailor, plagued by this parasite, had noticed that large fragments of the worm were passed whenever he had swallowed an unusual quantity of raw gin. Thinking that a stronger spirit might have a stronger effect upon his internal enemy, he tried a glass of turpentine, which completely cured him. This practice was then taken up by some unprofessional persons, who gave turpentine, with similar success, in several cases. At last Dr. Fenwick, in conjunction I believe with my friend Dr. Southey, investigated the subject; and when they had satisfied themselves of the value of the remedy, the

result of their enquiries was communicated by Dr. Fenwick to the late Dr. Baillie, in a letter which was read before the Medical and Chirurgical Society. But there is nothing new under the sun. Fifty years ago, Mr. Malden, in the *Memoirs of the London Medical Society*, recommended the same remedy, in the same doses, for the same purpose. But his recommendation had been neglected, or forgotten.

The dose of turpentine is from half an ounce to two ounces. It may be given in combination with castor oil; or castor oil may be administered afterwards to assist its purgative effect. It should be taken in the morning, fasting: and no drink should be admitted into the stomach until the medicine begins to operate, lest sickness and vomiting should be provoked. The worm generally is voided, dead, within an hour or two.

The inconveniences of turpentine as a remedy are its nasty taste, the sort of intoxication it is apt to produce, the distressing sickness it excites in some persons, and the strangury it sometimes occasions. This effect of it, however, is less common from a large than from small doses of the oil. The bowels should be kept open with castor oil, so long as the urine retains the violet smell, which indicates the presence of the turpentine in the circulation.

Upon the continent a celebrated empyreumatic oil, called Chabert's, is in great repute. It contains turpentine; but is still more nauseous than it. One part of the empyreumatic oil of hartshorn is mixed with three parts of oil of turpentine. After the mixture has stood for three days, three-fourths of it are to be distilled over, in glass vessels, by means of a sand bath. Chabert was a veterinary surgeon; and had used this remedy with remarkable success upon domestic animals, cows, dogs, and sheep. Bremser, after testing its safety by taking it himself, administered it, he tells us, to no less than 500 individuals troubled with *tænia*. Among these were two children, a year and a half old. He found it both a powerful and a permanent cure. Of the whole number treated there were but four who required a second course of the remedy. It seems to kill both the worms and their ova. The dose is two teaspoonfuls, night and morning, until four or six ounces have been taken; a purgative being from time to time interposed. If that dose produces any confusion of head, it must be diminished.

Bremser admits that this curative process is tedious, but affirms that, on the other hand, it is safe, and but little inconvenient. When the patient has continued free from any symptoms of tape-worm for three months, he concludes that the cure is absolute. Other practitioners agree with him in attesting the efficacy of this oil; but are not

so confident about its perfect safety and convenience.

Another great remedy is the bark of the pomegranate-root. This is at least as old as the time of Celsus. It has long been employed in India. Its value has only been recently appreciated in France; and in this country it is not much used, I believe, even yet. You may read a very instructive account of its effects in a paper communicated to the Medical and Chirurgical Society by Mr. Breton. He boiled two ounces of the fresh bark of the root in a pint and a half of water, till the decoction was reduced to three quarters of a pint. Two ounces of this, cold, he gave to a patient who had tape-worm, and repeated the dose every half hour until four doses had been swallowed. About an hour after the last dose, an entire *tænia* was voided, alive.

The bark dried in the sun he found still more active. A stout man, 40 years old, took a decoction prepared in the same way as the former, only with the dried instead of the fresh bark. Three hours after the first dose, a live tape-worm came away, 19 feet two inches long. The medicine thus prepared seemed to be too strong; the patient was sick, giddy, and trembling for several hours. He, also, had taken four doses.

To two boys, of seven and ten years of age, he began early in the morning to administer one ounce of a decoction made of half the previous strength, every half hour, for six times; and then stopped. In the middle of the day he resumed the medicine in half-ounce doses. Giddiness and faintness soon came on; and, about five o'clock, each of the patients passed a *tænia* of the *solium* kind.

A scruple of the powder was given, mixed with water, every hour, for five successive hours, to a boy of nine. Forty minutes after the last dose a living *tænia* was expelled.

The same quantity was given to a girl, ten years of age; beginning at eight, and repeating the dose hourly till twelve o'clock. At twenty-four minutes past one she voided a living *tænia lata*: and the next morning, at nine o'clock, a dead *tænia solium*. This curious case shews that the two species may exist in the same person at the same time.

Mr. Breton relates other examples; but those which I have cited are quite sufficient to demonstrate the power of this substance. The bark appears to act upon the worm as a poison. In tepid water *tæniæ* will live for several hours. When they are plunged into the aforesaid decoction, they writhe and manifest great uneasiness. Between the first dose of the medicine and the expulsion of the worm the shortest period appears to have been three hours, the longest twenty-five.

Louis' ten cases, before referred to, were

all treated by a nostrum called the potion of M. Darbon. It proved successful in all. Eight or ten ounces of it were taken in the morning, before breakfast; and the cure was accomplished by that single dose. It is said to be quite safe, to have no very decided taste, and to cause no farther inconvenience than a slight colicky feeling, and uneasiness in the epigastrium, less than is produced by many a purgative: and even these sensations were probably owing to the movements of the worm; for when, after the lapse of four months, the dose was repeated, it was followed by no inconvenience at all. The medicine is not strongly cathartic, and sometimes requires the aid of a lavement. In each of these cases the expelled *tæniæ* were apparently dead. Their *heads* were detected in the evacuations: in one instance seven heads were seen. Louis says that within a few days at farthest after the discharge of the worms, all the previous symptoms of their presence ceased; and the patients improved in respect to appetite, digestion, complexion, flesh, and strength. They all remained well four months afterwards, and then the potion was again administered; but it brought away no more worms. Some of the patients, who had previously tried other modes of cure, had never enjoyed so long an interval of freedom.

Various other remedies have been employed, and employed with more or less success. One of them, the root of the male fern, formed the basis of a nostrum, called Madame Nouffer's, which was so highly thought of, that in 1776 the King of France gave that lady some hundred pounds sterling for the secret of its composition. I think, however, you will find the oil of turpentine equal to the cure of tape-worm in most instances. Should it fail, or should circumstances forbid its use, I would advise you to resort to the bark of the pomegranate root. It seems probable that M. Darbon's remedy, if its nature were divulged, would supersede all others.

#### ON

#### FRACTURE OF THE SKULL\*.

BY R. A. STAFFORD,

Surgeon Extraordinary to His Royal Highness the Duke of Cambridge; Senior Surgeon to the St. Marylebone Infirmary.

FRACTURE of the skull is caused much in the same manner as concussion—by a severe blow upon the head, but so much more violent that the cranium is broken; consequently, that, independent of the fracture, the worst symptoms also of concussion occur.

\* Being the substance of a lecture delivered at the St. Marylebone Infirmary.



Fracture of the skull may be divided into three classes: 1st, simple fracture; 2nd, comminuted fracture; 3d, fracture with depression on the brain.

Simple fracture is a mere split of the bone; comminuted, the bone being splintered at more than one division, something like, perhaps, a pane of glass being struck with a small stone, and not going through it, being radiated from the centre. Fracture with depression is where the bone is beat in upon the brain. The first two of these are not much more than concussion: the bone is not displaced; consequently union will take place without trouble. But fracture with depression is indeed a serious injury—an injury difficult to treat; full of doubt and danger.

By way of simplifying the matter, I shall divide these fractures into simple and compound. Simple fracture with depression, is, where only one piece of bone is broken and depressed to a lesser or greater extent, resembling a wedge. Compound fracture is, where the bone is broken into several pieces, and then thrust in upon the brain. I have seen several cases of simple fracture of the skull with depression; and these are those which cause so much discussion, whether you should trephine, or whether you should not trephine? It is laid down in books, and I believe more particularly by Mr. Abernethy, that if there is depression with symptoms of compression on the brain, you ought to trephine; and, on the contrary, if there is depression without those symptoms, you ought not. Now in the first opinion I perfectly agree. You must trephine—trephine by all means: in the second I am doubtful. In my opinion, it depends upon the *depth* the bone is driven in. If the bone is only depressed just below the outer surface of the external table, then there will be no necessity to trephine, or even to the diploe, between the inner and outer table; you need not do it. But if it is driven lower than that, I certainly should do it, or use the elevator, if possible, to raise up the depressed portion. My reason is the following: when the bone protrudes deeper, its edge rests upon the dura mater, and presses upon the brain; consequently, although there are no symptoms *then* of compression, the fractured edge becomes a foreign body, and produces inflammation and its consequences, suppuration, &c., and most probably death. I have seen such cases. I remember a case where a woman received a blow on her head, and her skull was fractured. The injury took place on the right parietal bone. A single portion of the skull was depressed, about the fourth of an inch. She had no symptoms of compression, and the case was discussed by men of the greatest talent. It was decided not to trephine. In a few hours

inflammation came on, she was delirious, and she died. On examining her head, the edge of the bone was found resting upon the dura mater, and pressing upon the brain. Inflammation had taken place, and pus had formed. Other cases of the kind have occurred to my knowledge, and they made a great impression on my mind. I therefore came to this decision; that if the fractured portion was beat in so as to become a foreign body resting upon the brain, I should trephine, or use the elevator, if possible, to raise it up, whether there were symptoms of compression or not.

In the days of Mr. Pott, a most distinguished surgeon of his time, and who wrote upon injuries of the head, it was the fashion to trephine whether the bone was depressed or not. Mr. Abernethy first drew the distinction when the operation ought to be performed, and when not: that is to say, it ought not to be done when there are no symptoms of compression. The rules laid down by Mr. Abernethy are excellent; but I think the description of cases I have mentioned are exceptions to them. I am aware that cases are mentioned where the depressed piece of bone has been driven very deep upon the brain; so deep that in one instance the indenture resembled a funnel, and yet the patients have recovered. This no doubt is true, but the cases that have not recovered, under the same circumstances, are not related. I am inclined to think that if a record of all the cases of this description were kept, it would be found that the recoveries would be fewer than the deaths. It appears to me, that if symptoms of compression come on some time after the accident, it is usually too late to trephine, as the broken fragments of bone have already acted as a foreign body on the brain, and the mischief resulting from an extraneous substance resting on so delicate a texture has produced the natural consequences—inflammation, softening, and the formation of pus.

And now I shall speak of what I term compound fracture of the skull. I mean when the bone is broken in more pieces than one, and driven deep upon the brain. Such accidents happen from the head being hit at a particular point. For instance, the head may be struck by a hammer, the corner of a stone-step, or any thing hard, such as a piece of iron projecting from a wall, &c. The best thing I can illustrate this accident by is, the breaking of the shell of one egg when another has been pressed against it. The fractured egg is broken into several different parts, and is at the spot pressed in upon its contents, the centre being the deepest.

It generally happens in this description of fracture that the bone is not only depressed, but that there are the most confirmed symptoms of compression of the brain,



and that you cannot hesitate what to do. You have nothing else left but to trephine. But I have seen two cases of this kind where there were no symptoms whatever of compression; and these are the cases which so confirmed me in the necessity of trephining, when the fractured bone became a foreign body resting on the brain, when there were no symptoms of compression. During the time I was house-surgeon to St. Bartholomew's Hospital, I was called up early one morning to see an Irishman who had been fighting with his fellow, and had received a blow upon his head. I examined the wound, and found the skull was fractured, and the broken pieces of bone were driven at least half or three quarters of an inch upon the brain. I was surprised to find that the man had no symptoms of compression. He walked about the ward, and talked as if he had only received a slight wound on the head. He told me all about the quarrel and the whole proceeding, as if but little had happened. It being laid down as a rule that if there were no symptoms of compression in fracture of the skull, you ought not to trephine, I dressed the wound, and sent for my superior officer. He came, and I told him the nature of the wound—that there was fracture, with depression of considerable depth. He did not believe me: he quite laughed. The man was as rational as any patient in the ward, and could answer any question you chose to put to him. I requested him to examine the wound. He answered, "No, you have dressed it very well; and if there were depression, it is not the practice to trephine until symptoms demand it." I began to think I was wrong, and had made a mistake. However, on the same night the man became comatose, insensible; his breathing stertorous: in fact he had exactly the same symptoms as in apoplexy. I sent again instantly to the surgeon whose patient he was. He came, and saw the state the man was in. He examined the wound, and found he had depression. He said to me, "You are right; I shall immediately trephine this man. I was not justified in doing this operation before: no symptom existing to demand it." The man was trephined: the brain at the part was inflamed and softened, and pus had formed. He died.

Since this case I have met with another of a similar description, not under my own care, and which occurred very much under the same circumstances—a quarrel and a blow on the head. This man was sensible for two or three days; he became comatose, with apoplectic symptoms, and died. In such cases as these I am inclined to think it would be better to trephine as soon as possible after the receipt of the injury. By doing this the depressed portion of bone will

be prevented from becoming a foreign body. It appears to me, that the rule laid down, that "you should never trephine when there are no symptoms of compression," is too stringent; it should depend upon the *depth* the bone is driven in upon the brain, and whether the fractured portion will become a foreign body or not, resting on or being driven into its substance.

There is one thing we should be very careful of when we have trephined, which is, to examine well that we have not left a splinter of bone behind. A splinter of bone left in the brain will cause inflammation, suppuration, and death. I have known one or two cases where this has occurred, and the patients died.

There is another description of fracture which I have not mentioned, which is, that of the basis of the cranium. To produce this accident great force is required; and it generally is caused from falling from a great height upon the top of the head, whereby a *contre coup* is given to the base of the skull, by which it is broken. It can be known by the severity of the concussion, and frequently blood issues from the ears and nose. Should there be compression from extravasated blood, there is but little hope of the patient. We must treat fracture of the base of the skull as we would concussion; but it is a most dangerous accident, and the patient more often dies than lives. I have seen many of these cases, and shall relate one. A man fell from a scaffold upon the top of his head. He was taken up senseless, and he had bleeding both from the nose and ears; but there were no symptoms of compression of the brain. He was treated actively for the concussion, but his senses never returned; and within three days he died. On examination of the skull, the basis was fractured completely across, from one meatus auditorius to the other. The whole substance of the brain, on being cut into, presented the bleeding points of enlarged vessels; and the membranes were inflamed.

There are other cases of fracture of the skull. Sir Astley Cooper mentions a case of circular fracture, "commencing at the top of the head, passing down on each side, through the temporal bone, and meeting at the basis." There are fractures of all descriptions. Indeed, when we consider the peculiarity of the accidents which occur to the head, it would be perfectly ridiculous to attempt to describe all of them: in fact, it would be impossible.

The notes of the following cases, which occurred in this infirmary, were given to me by Dr. Boyd.

#### *Fracture of the skull.*

Robert Davis, a lad, in sliding down

some banisters overbalanced himself, and fell on his head on some flags, the height of 25 feet. He was taken up in a comatose state. There was a slight scratch on the crown of his head, and a considerable effusion of blood beneath the scalp; the respirations, as well as the pulse, were slower than natural; the action of the heart became irregular, and the breathing slower till it stopped. Death occurred within two hours after the accident.

*Examination 28 hours after death.*—About four ounces of fluid blood extravasated beneath the scalp. A fissure in the skull about seven inches in length; it extended from the right orbit to the coronal suture. The orbital plate was also divided. A quantity of blood effused around the eyeball, and a thin layer also over the hemispheres of the brain, beneath the arachnoid membrane. The cerebral substance itself not injured.

*Fracture of the left malar bone, extending inwards around the roof of the left orbit; a small wound of the skin, corresponding to the outer edge of the left eye-brow.*

William Chapman was brought by two drunken men to the infirmary, who said that they had picked him up in the street, but knew nothing further of him. The man was unable to give any account of himself at the time he was admitted. The person for whom he worked stated subsequently that he had been bottling ale, of which he had drank sufficient to make himself tipsy. He went out of the cellar to make water, and fell off a step about six inches high on his face, which occasioned the wound; it bled at the time, and was dressed. The man walked home that evening, about a mile. He returned to his work on the following day, but did not feel equal to it. This occurred on Wednesday; he did not come to the infirmary for two days after. He was treated by losing blood locally from the head, by the constant application of an evaporating lotion, purging frequently, and taking calomel and opium combined. He died five days after admission, with typhoid symptoms.

*Examination 36 hours after death.*—There was softening of the anterior part of left hemisphere, which rested on the orbital plate, but no displacement of bone. The lateral ventricles contained some purulent matter. There was considerable effusion of lymph around the medulla oblongata and cerebellum. As I have remarked before in a former paper, there have been two cases of fracture of the skull this year under my care in this infirmary: they were both simple fractures, without depression. They were treated like concussion of the brain, and did well.

And now I have been talking of compression of the brain, but I have not described

the symptoms. The symptoms of compression of the brain are total insensibility, a dilated pupil, stertorous breathing, a slow and perhaps irregular pulse, a lifelessness of the whole body. If we take up the arm, it falls down again; and if we lift up the hands, the head lolls on the shoulder. In short, the patient has exactly the same symptoms as in apoplexy. We know the cause—there is compression on the brain from fracture, or from extravasated blood.

It sometimes happens that a blow upon the head causes the rupture of a blood-vessel on the brain, when symptoms of compression take place. Under such circumstances we must trephine immediately at the point the wound takes place, and remove the coagulum. The following is a case of the kind, which occurred while I was at St. Bartholomew's Hospital:—A man fell down Waterloo Bridge steps, and struck his head. He was taken up senseless, and carried to the hospital. His head was examined, but there was no fracture, and only a contused wound on the right temple. The pupil of the eye was dilated; the pulse labouring and slow, about 50; the breathing stertorous; and the whole body cold, and in a lifeless condition. Instead of getting better he got worse. He was trephined, and a large coagulum of blood was found. It was removed, but it formed again. The vessel could not be found. The man died in a few hours.

It has often occurred to me that the instruments for trephining might be improved. To bore a large hole in a man's skull, to raise up depressed portions of bone, when it may be done in a much simpler way, appears to me absurd. I believe there are many cases where it might be avoided; for instance, in simple fracture with depression, when only one piece of bone is driven in upon the brain, like a wedge, and it cannot be lifted up by the common elevator, why not use a file of a particular construction, and file a groove in the centre of the whole bone exactly opposite to it? By this manoeuvre an instrument or elevator adapted to the groove, and made exactly to fit it, might be introduced under the depressed portion, by which it could be raised up.

In complicated fractures, where more pieces of bone than one are depressed, a groove, corresponding to each depressed portion, might be filed on the edge of the unbroken bone, and thus each fractured portion might in the same manner be raised or removed. By employing such means as that the operation for these, it is my opinion trephining would be seldom required. I have invented some instruments for the purpose, which can be seen at Mr. Ferguson's, surgeon's instrument maker, Giltspur Street, St. Bartholomew's Hospital.

And now I have to speak of the treatment.

We must remember that fracture of the skull is a double injury—the mechanical injury and concussion of the brain. If there is depression, we will relieve the mechanical injury by trephining, or using the elevator; but we must not do this alone; we must treat the patient for concussion of the brain likewise. I have already stated how to treat concussion of the brain. We must bleed freely, both generally and locally. The patient must be kept on the lowest diet. A cold lotion must be constantly applied on the head. The bowels must be kept open, and fever kept down. If the symptoms run on, we may give calomel and opium to affect the mouth, the principle of which I have pointed out to you. It is also of great consequence that we should dress the external wound with great care, bringing the cut edges together, so that they may heal by the first intention: being also careful that the plaster is so applied that no air can get to it. It is a good plan to dissolve sealing-wax in spirits of wine, and brush over the plaster this solution. It will become dry, and will prevent both the air and the wet applications from getting to the wound.

In conclusion let me advise you to take notes of these cases. They are too often connected with manslaughter and murder. You are in a very responsible situation. A judicial inquiry most probably will be made, and you are a witness of the greatest consequence.

#### REMOVAL OF UPPER JAW.

By JAMES DOUGLAS, A.M.

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(For the London Medical Gazette.)

IN the MEDICAL GAZETTE of the 29th October, 1841, I related the case of Adam Tennent, æt. 19, from whom I had removed, a year before, the whole upper jaw-bone, with the exception of its tuberosity, for a tumor of a medullary character, growing from the lower part of the bone, and distending the maxillary sinus. He still remains quite well, nineteen months after the operation. But as it is unfair to relate only successful cases, and conceal those which terminate unfavourably (although this is too commonly the practice), I proceed to give an account of another similar case, where the disease had gone much further, requiring the removal of the whole maxilla of one side, and about a third of the other; and where the pa-

tient recovered from the operation, but died four months afterwards, from the recurrence and extension of the disease.

Mrs. M'Kenny, æt. 35, October 3d, 1841.—About seven months ago observed gums of upper jaw to swell, attended with superficial ulceration. About four months ago had all the five double teeth extracted from right side of upper jaw. About two months ago right cheek began to swell, and became much more prominent than the other. She showed her mouth to several surgeons, one of whom gave her mercury, which did her a deal of harm, and others prescribed washes and various remedies, which did her no good. She was brought to me two days ago, when finding the incisors and canine teeth of the upper jaws loose, I extracted them, and found the soft matter forming the tumor adhering to them; it having taken the place of their sockets, which had become absorbed or converted into it.

A tumor having the characters of malignant *epulis* is seen growing all round alveolar process of right upper jaw, and round left as far as canine tooth. It has the form of red granulations, soft, yet pretty firm, and seemingly covered by the mucous membrane. Palate has a disorganized look, and there is a hole into nose about halfway back, in the middle line, which would admit a quill. No very accurate examination can, however, be made of the inside of the mouth; for a small abscess has formed in right cheek, just below the malar eminence, causing swelling and redness, from which pus can be squeezed into the mouth, by the side of the gums; and this prevents the mouth from being opened. There does not, however, seem to be anything malignant in this abscess or swelling; it would seem to be merely the result of the irritation produced by the state of the gums. She complains of little pain in tumor, but describes a darting pain as passing occasionally towards right temple. Probably this also depends on the abscess.

She is emaciated, and looks much worn out; pulse 100; respiration 24; no pectoral symptoms; sleeps tolerably; bowels free. Has had several children; the last two years ago. Catamenia suppressed for last two periods.

I recommended an operation for the removal of the tumor, with the bones.

October 4th.—I took Dr. Macfarlane (one of our most skilful operating surgeons) to see her, who fully concurred in the necessity for an operation, although satisfied that the chance of success was not very great. She immediately gave her consent.

5th.—At noon I proceeded to the operation, assisted by Dr. A. D. Anderson, Dr. J. G. Fleming, and Mr. Lyon; Dr. Macfarlane being prevented, by a call just before the hour, from being present. The patient was placed in a chair facing a window, her head supported by Dr. Fleming against his breast, and her hands held by her husband, who knelt behind.

Standing in front, I made an incision from just below inner canthus of right eye, in the hollow by the side of the nose, round the ala, and down the right edge of the filtrum, through the upper lip. The flap having been dissected up as far as it could be, I made another incision from the malar eminence through the abscess, obliquely downward and forward to the angle of the mouth, passing above the orifice of the parotid duct. The flap was then dissected back as far as the junction of the malar and maxillary bones, and the latter was found so soft as to yield to the knife. The posterior border of the bone was nearly brought into view, some part of the masseter being divided. The contents of the orbit were now raised from that part of its border formed by the maxillary bone, the scalpel being pushed back along its orbital plate; the left side of the upper lip was separated from the bone, and the nose, with its cartilages, was loosened from the anterior nasal spine. A strong pair of Liston's forceps were now used: one blade being introduced into the left nostril, the palate plate of the jaw was divided. The vomer was next divided in the same way; then the nasal process, on a level with the lower edge of the pons plana of the æthmoid bone; and lastly, the union of the malar and maxillary bones. Care was taken here to cut into the sound bone. The maxilla was now nearly loose; a few touches with strong scissors at the back part brought it away, by depressing it into the mouth, and the right palate bone came away along with it. The soft palate was now divided, and the mass removed. On examining the

removed bone, a small portion was discovered to have been left far back, but was easily dissected out. The bleeding was very trifling; indeed the only vessel which threw out blood so as to require ligature, was the facial, divided in the second incision.

It now only remained to remove the diseased portion of the left maxilla. The lip was dissected up as far as the second bicuspid, and the alveolar process was nipped through with one stroke of the forceps, breaking out that tooth, and the body of the bone was cut across with a second, below the lowest spongy bone. The jaw seemed hard and sound when cut. The mouth having been well sponged, the actual cautery was freely applied. The whole, including the examination of the pieces removed, occupied about twenty minutes.

Oiled lint was now stuffed into the cavity, and the two incisions were closed with four points of twisted, and six of interrupted suture. Strips of court-plaster were interposed between these. The face looked wonderfully natural. She was very cold, although she had had some hot spirits and water before the dressing. A bandage was passed round the head and face so as to give support. Pupils were observed to be dilated to the utmost (was this an effect of the pain in general, or of the cautery on the second trunk of the fifth nerve, or on the inferior oblique branch of the third?). Forty drops of laudanum were given in a little spirits and water from the spout of a tea-pot, and swallowed without much difficulty. In the evening she was tolerably easy, and took some thin gruel, and forty more drops of laudanum.

*Examination of parts removed.*—Right maxilla is found almost entirely converted into a semi-transparent firm substance, somewhat gristly, except orbital plate, which is quite healthy. Body of palate bone, and inferior spongy, have undergone the same change; in the latter there is not an osseous particle remaining. Infra-orbital nerve has been divided just behind where it goes to sink into its canal, just behind where the bone broke in removing it. Palate presents two projections; one into nose, the other into antrum. Its firm rugæ, covered with mucous membrane, are still entire, though the bony

arch has become quite soft. The antrum was filled with a soft brainy mass. The portion of the left maxilla which was removed in the second stage of the operation seems to have been divided through firm healthy bone; so that we may hope that all the disease has been really got away.

6th.—Slept a considerable part of the night; complains little of pain; asked for her porridge in the morning, and took it mixed thin with milk. Pulse only 90.

7th.—Had a pretty good night. Skin hotter, and pulse up to 100. Eyelids œdematous. Took off the bandage and lint, and found face scarcely at all swelled; whereas my former case swelled very much. Union is taking place along both incisions. Removed one needle, and put a strip of court-plaster in its place.

8th.—Removed the other three needles, and the stuffing of lint. Pulse only 80; requires physic. To have a little castor oil, and some beef-tea.

9th.—Removed all the stitches. Union now complete; swallows wonderfully well. Dipped the lint with which the cavity is stuffed in camphorated oil to lessen the foetor, and stimulate gently.

11th.—Took all the plaster off. Line of union perfect. Washed out the cavity with a syringe. To have some porter.

26th.—Three weeks complete. Cavity is filling up; sleeps without laudanum; dresses it herself; gains strength slowly. I have supplied her with some porter, and given her some tincture of steel.

November 2d.—A month to-day. Has been using an injection of zinc, under which the cavity from which the right maxilla was removed has granulated and contracted very much. I am very sorry, however, to see a portion of fungous growth beginning to sprout from left maxilla, close to its alveolar border. General health much improved. Two glands are felt enlarged behind right ascending ramus of lower jaw, immoveable, and painful on pressure. To rub them with oil.

6th.—The fungous growth is now quite decided. A very suspicious thickening of septum nasi is also seen, of a dark red colour superficially, and ulcerated in each nostril. The space from which the right jaw was removed still

granulates well. The glands behind the lower jaw are no longer enlarged. Complains much of deep-seated pain in right side of head.

18th.—To-day, observing right eye slightly protruded and vacant-looking, I inquired if she saw with it; and was surprised to find it quite insensible to the candle, a few inches off; pupil being moderately dilated, and quite immoveable. Pain in the head has increased, and she has been mostly in bed for three days. I showed her to Dr. Macfarlane immediately after I observed the fungus appearing on left side, and he said he thought it would be a pity to let her die without trying to remove it, as the wound on the other side was looking so well. But now I am persuaded that there is disease going on deeper in the right side, in which the optic nerve has become implicated (for she saw me with the right eye weeks after the operation), so that any further attempt to remove the disease by operation would be worse than useless. I must therefore abandon her to her fate.

Dec. 28th.—The disease is steadily progressing. Right eye is still more protruding, and has been for a month quite insensible to light. Its eyelids much swollen, and of a dusky red. Left eye almost quite insensible also. Has been for three weeks entirely confined to bed.

Died February 4th, 1842, four months exactly after the operation, quite exhausted. Her sisters would not permit any inspection of the body.

I may mention a curious case which I saw some time ago, of spontaneous separation of the upper jaw. A boy had cancrum oris, which took on a healthy action, and healed. The upper jaw, however, died, and came away entire, with the exception of its nasal process. It has separated at the sutures from the palate bone, the vomer, the malar, and the maxilla of the opposite side. The bone is not completely developed; the two bicuspidæ, and the dens sapientiæ, being still deep within the jaw. The surgeon whose case it was promised to give me a particular account of it; but I have never been able to obtain it from him.

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## FUNGUS OF ANTRUM—REMOVAL OF SUPERIOR MAXILLA.

By W. LYON,

One of the Surgeons to the Glasgow Royal Infirmary; and Lecturer on Surgery in the Portland Street School of Medicine.

(For the Medical Gazette.)

JEAN SCOTT, ætat. 45, Feb. 12th, 1842. Three months since began to complain of acute lancinating pains, shooting from right cheek over same side of forehead, and becoming very severe at night; some swelling appeared over right maxilla at same time, which has since remained stationary. In addition to swelling above described, the right eye is pushed upwards, and projects considerably; while it feels tense and is less moveable than the other. Some fulness in right temporal fossa, which feels doughy, and is painful when pressed. Pressure upon palate, or upon the maxilla from inside of cheek, occasions pain, but no softness or yielding of the bone is perceptible. In right nostril, a tumor of irregular figure, and about the size of a turkey bean, is observed, which patient states was much larger until a few days ago, when a considerable portion of it was removed by the dispensary-surgeon, a copious discharge of blood following. General health good; catamenia have ceased; appearance healthy; patient at work until admitted.

A few days after admission she lost about half a pound of blood from right nostril; and in two or three days again, about a similar quantity from left. At both times bleeding was arrested by filling nostrils with lint, moistened in Sol. Sulph. Cupri.

15th.—To-day a consultation of the medical and surgical attendants of the hospital was held upon the case. Several of the consultants dissuaded from any interference, as they were of opinion the affection was malignant disease of the antrum, and was so extensively and intimately connected, that its eradication was impracticable, and therefore, though operated on, would return.

Again, other members of the consultation expressed their belief of the benign nature of the disease; that, whether benign or malignant, the antero-lateral parietes of the antrum should be opened, when the nature and connections of the disease would be made apparent: if it

was confined to the antrum, they recommended it should be cleared out, while, if the body of the maxilla was implicated, that the bone should be removed.

A third section of the consultants, of which I was one, insisted that, whether the morbid growth was malignant or benign, the bleeding from the nostrils, the prominence of the eye, the swelling in the temporal fossa, unequivocally shewed it to occupy each of those localities; if it had generally destroyed the parietes of the antrum, and incorporated itself with the adjoining parts, entire removal was impossible; that there was not positive proof of such condition existing, it being conceivable that the walls of the antrum were only expanded, not destroyed, and at any rate, we being in ignorance on this point, removal of the entire superior maxilla afforded the most rational procedure for effecting eradication of the morbid mass; while the previous opening of the antrum would be at least useless, and would render the operation more difficult and painful.

It was latterly carried that the antrum should be the first place opened, and ulterior proceedings determined by circumstances.

20th.—The patient being seated on a chair, and properly secured, a scalpel was pushed from the inside through the cheek, at a point corresponding to junction of malar bone with superior maxilla, and carried down until it cut itself out at the angle of the mouth. The thinned antero-lateral aspect of the antrum was easily opened with the gauge, when the cavity and the body of the bone were found filled with soft cerebral-like matter: it was now agreed the bone should be removed, which I proceeded to do in the manner advised by Mr. Liston, in his very useful work on Practical Surgery.

The right middle incisor being extracted, I carried an incision from the inner canthus down by the side and ala of the nose, detaching the connections of the latter from the edge of the maxilla, and cutting out in the mesial line of the lip. The coronary, and other branches of the facial, were commanded by the assistants; the flap dissected up until I reached the inferior edge of the orbit; the eye separated from the orbital plate of the maxilla, supported by a bent copper spatula, and the infra-

orbital nerve was then divided in its course along the floor of the orbit.

I now introduced the blades of a very strong cutting forceps under the point of junction of the malar with the maxillary bone, the edges of the blades being applied to the anterior and posterior surfaces of the bone, that division might be more easily accomplished than if the blades had been placed at the upper and under edges\*.

Entering the one blade of the same forceps into the upper part of the opened nose, and the other into the internal angle of the exposed orbit, the nasal process of the maxillary was easily divided, as was the alveolar ridge and bony palate, by placing one blade in the mouth, and the other in the floor of the nostril. I believe previous division of the alveolar ridge by the saw tends to prevent disagreeable splintering.

The bone was now easily depressed, its posterior connections broken, and lacerated rather than cut, in order to avoid bleeding; the soft palate cut across a short distance in front of the velum, and the bone entirely separated.

The hæmorrhage was copious, but not alarming; no vessels could be particularized; and, partly to repress the bleeding, partly to destroy the morbid growth and its sources, if not all removed, the red-hot iron was freely carried over the exposed surfaces of the sphenoid and ethmoid bones, from which the maxilla had been wrenched, and likewise into other parts of the broad, deep, and bleeding cavity. The wound was dressed in the usual manner. The operation was easy of execution, did not occupy much time, and the patient was only slightly and briefly exhausted by it. The cells and antrum of the extirpated maxilla were found filled with a soft brain-like matter.

21st.—Patient slept a short while last night: pulse now 72; right eyelid and side of face red and swollen; pain in throat during deglutition.

Hab. Ol. Ricini, ʒj.; Tr. Opii gtt. lx. h. s.

\* With the strongest forceps I have seen, I have found myself unable on the dead subject to divide the process formed at the junction of the malar with the maxillary bone, the thickness of the bone causing the handles of the instrument to be widely separated, so that they are only held by the tips of the fingers, and much power cannot be applied. I would advise intending operators to provide themselves with a more efficient instrument than is usually employed in this operation.

22d.—Pulse 96; swelling, redness of eyelids, and pain in swallowing, continue: five of the needles removed from wound, which appears to be united.

Ol. Ricini, ʒj.; repetat. Tr. Opii h. s.

23d.—Pulse 72; remaining needles and stitches removed; wounds have adhered; swelling of face diminished; pain in swallowing continues; bowels have been freely moved.

Aq. calida vulneri Vap. Aq. Calid. inhal. pro re nata.

25th.—In same state as yesterday, with addition of slight cough.

Tr. Opii, ʒij.; Mist. Mucilag. ʒij. M. Coch. parv. p. r. nat.

26th.—Patient was found dead this morning, without having been observed by nurse to be worse than at hour of visit yesterday.

27th.—Body inspected to-day: no morbid appearance in contents of cranium; edges of wound adhering; superior maxillary found entirely removed, and with it the whole of the malignant deposition; a small perforation in septum narium; the glottis œdematous, and, from the same cause, rima glottidis much diminished in size; unequivocal traces of acute inflammation extending down trachea; lungs gorged with blood; no appearance of disease in any of the viscera. State of blood-vessels, or their contents, not examined.

The sudden and unexpected death of this patient caused me much surprise and regret; the more so that, upon careful examination of the surfaces from which the maxilla had been removed, and of the viscera, no traces of the cerebriform deposition had been detected; and, therefore, had she recovered from the consequences of the operation, return of the disease was improbable, or at least would not have arisen by extension from the vicinity of the parts from which the maxilla had been removed. I was also the more anxious for her recovery, that the operation was characterized by some of the lookers-on as severe, cruel, and horrible. That removal of the superior maxilla is attended with much more, or even as much, pain as many of our common operations, say amputation, I am inclined to deny, and I am at all events positive it is not proportionably so often fatal as that frequently executed, and therefore

less impressive though very dangerous, procedure. It is from the disfiguration to the countenance during the operation, the inevitable violence required to crush through the connections of the bone, and to wrench it from its situation, the deep chasm which is exposed, the copious hæmorrhage, and the apparently threatened suffocation, that excision of the maxilla has been styled, even by members of the profession, as a "frightful operation," and as scarcely justifiable. But it rarely leaves any deformity: it can be quickly performed: some of the parts concerned in the operation are not very sensitive: it frees the patient from a lingering and certainly fatal illness; does not leave him deprived of any important function, and is therefore equally, if not more defensible, than many of our operative interferences; and we justly discard feelings from which we instinctively shrink, and follow the dictates of calm, and, as in this instance, humane decision, when we set aside considerations of even severe pain and great danger, when the life of the patient is at hazard.

There are better founded objections to the operation than its supposed severity, viz. the impossibility of always eradicating the disease, and occasionally, though I believe rarely, the fatal effect of our interference.

There are two causes, either of which may frustrate the intention for which we practise removal of the superior maxilla in malignant disease of the antrum:—1st. The state of the constitution; 2dly, the extent and connections of the diseased part.

That fungus hæmatodes, or cerebri-form degeneration or deposition, which under many different forms constitutes malignant disease of the antrum, is an affection often existing in different parts of the system simultaneously, has been frequently shown. In some instances it has exhibited itself in a new locality so soon after removal of the active and only evident diseased part, as to lead to the strong belief it had existed previous to the operation.

In other cases the patient dying from the effects of the operation, dissection has exposed the affection in an incipient or advanced stage, in some part or viscus, though attentive examination during life had failed to detect it. In numerous instances, however, patients

have recovered after operations performed for hæmatoid or cerebri-form growths; in some of the cases have remained free for many years, then becoming affected; while again others have survived for long life-times perfectly exempted\*. But, in addition to these facts, we possess proofs from analogy that diseases unequivocally general or constitutional, the part at the time principally diseased, to such extent as threatens destruction to life, being removed, the patient will enjoy long-continued health: we have almost daily proofs of this. A person of a strumous family, with strong characteristic appearances of that diathesis, which indicate either the existence or the capability of suddenly producing the morbid degenerations peculiar to that affection, arrives at adult age without its local manifestation. It may be asserted that up to this age the disease did not exist, but only the capability for its production; but it now shows itself in a form not to be mistaken, and to save life the state of the member in which it is situated necessitates amputation: the patient recovers, and, in a majority of cases, immunity from further attack is obtained.

Similar facts, though not so frequently, are observed in schirrus, in which, however, the local disease is capable of being conveyed into the system by absorption, and therefore operations are rarely useful, unless in the earliest stages of the disease.

The belief, then, that in malignant diseases, and in scrofula, the whole system is tainted, or, express it as we may, the entire solids or the blood are simultaneously, or capable of becoming simultaneously, affected, ought not to prevent us from operating, when the whole of the part in which the disease is at the time active can be entirely, and, so far as the operation is concerned, safely taken away.

This brings us to the consideration of the second cause which may frustrate the intention with which we operate in

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\* The patient upon whom Mr. Douglas's first operation for removal of the maxilla was practised, remains in good health, nineteen months having elapsed. I amputated at the lower third of the femur sixteen months since in the case of a young woman, who had a medullary tumor interspersed with bloody cavities, occupying and destroying the upper cord of the tibia, and she remains well. In the woman whose case is described in this paper, no malignant disease was detected at any part of the system.

malignant disease of the antrum, viz. the extent and connections of the diseased part. We know that hæmatoid or cerebriform disease rapidly extends itself, but whether by constantly increasing deposition, or induction of peculiarity of action, and consequent change of structure, is open to discussion. It is certain, however, that if any of the morbid tissue is left after operation, it soon involves the adjacent parts, rendering the interference useless. The absence of much pain at its commencement often prevents the patient from applying until the affection has extended beyond the limits of the antrum; while the disease being rare the surgeon is not afforded opportunities for its recognizance, and a correct diagnosis is not formed often until too late to be useful. A source of frequent error, causing the disease to be neglected, is the elasticity of hæmatoid disease being confounded with fluctuation—a mistake the more likely, that the fungus often shows itself in the usual site of gum abscess, or it protrudes into the nostril, and is taken for and treated as polypus, as in the instance I have detailed. It will be apparent that it is only while the morbid growth is confined to the body of the bone or to the antrum, in either of which it may commence, that there can be any hope from removal of the maxilla, for the neighbouring parts are so irregular in their surfaces, contain so many foramina, and enclose such important organs, that if the disease extends to them, its thorough eradication is impracticable. All this is evident enough, but the difficulty consists in determining in a given case whether or not entire removal of the fungous growth be possible. Where it protrudes through the palate into the nose or inside of the cheek, and there is no projection or elevation of the eyeball, nor impairment of its functions, which latter circumstance would denote extension of the disease backwards, and no fulness in the temporal fossa, there is a strong probability of success from removal of the maxilla.

But the growth may extend in all directions, and yet may be still contained within the walls of the antrum, and be thereby capable of entire eradication. In these instances the whole bone expands and becomes attenuated by the pressure within, as it may fre-

quently be seen partially to do in the more favourable cases, anteriorly inside of the cheek, inferiorly into the mouth, where the thinner expanded shell may be felt crackling under the finger like parchment: the feeling of crackling is not, however, to be obtained as a guide where the tumor is covered by the eye above, or the temporal muscle and fascia externally; but for the reasons above adduced, and from the fact, as seen by Messrs. Douglas and Pring, that in the case I have described, though the tumor had passed into the nostril, had forced upwards and forwards the eye, raised the temporal fascia and muscle, and still no vestiges of it were detected on dissection, prove that we are justified in operating, even under such circumstances, though the certainty of entire removal be diminished by the risk of the growth passing through the parietes of the antrum, and involving the adjacent parts.

Another point of difficulty is the determination of the benign or malignant nature of maxillary tumors. When I reflect upon the many different species of hæmatoid disease, and their various appearances at different stages of their progress, I think positive decision as to their nature impracticable, even though assisted by sight and touch, the aids of which we can rarely obtain without first laying open the antrum, as I was obliged to do. And although we may be thus enabled to decide whether the growth be benign or the contrary, as it is always, we believe, attached to the *whole* surface of the membrane lining the antrum, or its osseous walls, or springs from the *body* of the bone, we suspect even mild growths can be rarely removed by merely opening the antrum, as they, also, soon destroy the osseous parietes by pressure, and become inextricably connected with the adjacent organs and tissues.

We are aware cases are on record where a cure has been obtained by scooping out the antrum; but a greater number can be produced where the practice failed; and when we consider the impossibility of deciding as to the mild or malignant nature of the growth, even after we have got it exposed, our ignorance whether it arises from the membrane only, or from the osseous walls of the cavity, or body of the bone, in which latter circumstance the



scoop, assisted by the cautery, will prove insufficient; we must conclude that extirpation of the maxilla, which can be effected without leaving much, or any deformity, is, in seemingly favourable cases, by far the safest practice.

I am not acquainted with any sources from which the average mortality by the operation can be ascertained; nor am I aware whether any general cause of the fatal result has been observed. Considering the violence done in the immediate vicinity of the base of the brain, we should, *à priori*, fear implication of that organ, or its membranes; and recollecting the wrenching of the maxilla from its osseous connections, and the tearing and cutting of its soft attachments, below which parts are suspended the important and easily excited trachea and œsophagus, we should almost certainly anticipate inflammation and its consequences in them, as the effects of the operation.

What we should suppose probable occurred in my case; and I have detailed it principally with the view of putting other operators on their guard, that they may use precautions to command incipient laryngitis, or obviate its danger if it progresses; as, had my attention been directed to the probability of its supervention, I would have employed more energetic treatment against the pain in swallowing, and the cough which existed—symptoms which did not excite surprise or alarm, being supposed inevitable, and not known to have portended danger in similar circumstances.

Watchfulness appears the more necessary, that in this instance the pulse did not indicate any risk, being only 72 at the hour of visit; the cough was trifling; the difficulty on deglutition not very great; and the patient, though seen by the clerk at 11 P.M. of the night previous to the morning on which she died, was not remarked to be worse than at the hour of visit. The night nurse asserted she did not observe any thing in the state of the patient during the night to excite her alarm; but it is quite likely she was not in the room, where the patient lay, from the time when she was so with the clerk at 11 o'clock the preceding night, until nine in the morning, when she found the patient dead; shewing the propriety of an attendant being con-

stantly with the patient for some time subsequent to the operation, lest symptoms of œdema glottidis present, when danger can be averted by performance of tracheotomy.

#### A REMARKABLE CASE OF SWELLED LEG.

By Dr. ULRICH, of Teplitz.

*With a Few Remarks on Teplitz,*

By Dr. DOMEIER.

DURING a three months' stay at Teplitz, in the summer and autumn of 1841, I had the pleasure of making the acquaintance of Dr. Ulrich, to whom I am indebted for the following remarkable case.

As this watering-place has been but little frequented by English invalids, it may not be disagreeable to the reader if I preface my translation of Dr. Ulrich's case by a few details respecting Teplitz.

It is situated in Bohemia, forty English miles south of Dresden, and fifty-five north of Prague.

The traveller will probably prefer one of these two routes—

1. From London to Hamburg by steamer; then by steamer up the Elbe to Magdeburgh; then by railway to Leipsic; again by railway to Dresden; lastly, by posting, diligence, or *Lohnkutscher* (*Voiturier*) to Teplitz.

2. From London to Ostend, or Antwerp, by steamer; then by railway nearly the whole way to Cologne; then by steamer to Mayence (sleeping, if the traveller likes, at Coblenz); then by railway to Wiesbaden and Frankfort; next by diligence to Leipsic—concluding as before.

The journey will last from seven to ten days, and cost about £12.

The route by Hamburg, though the longest on the map, will generally be found the shortest in time, as it is traversed by steam throughout, with the exception of the journey from Dresden to Teplitz.

Almost every house in Teplitz is either an inn or lodging-house; and decent, though not elegant accommodation, may easily be obtained. It is singular that a watering-place which has so long been the favourite retreat of kings and princes, should be so little



redolent of their presence, and so destitute of a palatial air; but the traveller, sated with the splendour of the hotels on the Rhine, may, perhaps, be pleased with the rustic simplicity of Teplitz. One curious deficiency I do not recollect to have observed elsewhere. Instead of a bell in each room, there is one in the passage, common to a dozen chambers. The unfortunate who wishes to summon a servant, goes out and rings the general bell, and then draws a moveable cover over the number which represents his apartment on a tablet suspended beneath the bell. The waiter, should he happen to come, thus learns where his services are wanted.

Perhaps the best-situated lodging-house in the town is the *Deutsche Haus*, overlooking the handsome garden of the *Herrenhaus*. It belongs to Count Ledebour, who retains the first floor himself, and lets the second at the rate of 6fl. C. M. (or twelve shillings) weekly, for each front room, and 4fl. C. M. (or eight shillings) weekly, for each back room. Sometimes the Count lets the first floor, or part of it, to a visitor of the highest rank; last season he granted this favour to the Duchess of Angoulême. There is a coffee-house on the ground-floor. The *Herrenhaus* is one of the principal bathing and lodging-houses, and is a very large mansion indeed. I lived in it for six weeks.

The suburb of Schönau is far more cheerful than the town of Teplitz itself; so that the invalid who intends to use the baths of the former, or who can come into the town to bathe without inconvenience, will do well to select Schönau for his residence. The season at Teplitz lasts from the beginning of May to the middle or end of September. How many persons use the baths of Teplitz annually? This is not easy to ascertain. The *Badeliste* for the 24th of September, 1841, now before me, gives 4569 as the number of persons with their attendants who had arrived up to the 22d inclusive\*.

Now if, on the one hand, we imitate

\* The number who had arrived up to the 4th of August was 3486, so that 1083 came in 40 days, or about 27 a day. In August the daily arrivals were probably double this amount. The titles appended to the names of the *Curgäste* have sometimes a tendency to length; thus, in the list of Sept. 24th, Herr Rohrmann is a Prussian *Oberlandesgerichtspräsident*; and the first lady who arrived at Teplitz in 1841 was an *Oberpostamtassistentin*.

Dr. Granville's rigour in his account of Baden, and erase from the list all who arrive, but do not bathe, we shall not lose many; for almost every one bathes, at least occasionally. But, on the other hand, how are we to count the myriads, who, though not of sufficient rank to find a place in the list, flock into Teplitz from every district around, and use the waters as a panacea? Besides the private baths for the upper and middle classes, there are six public ones—three for men, and three for women. They are frequented from four in the morning till nine at night, and the price of admission is extremely moderate. A paper was fixed on the door of one, stating the price to be three kreuzers of the Vienna standard for a woman, and two for a child, the highest of these sums being less than a halfpenny English. At a private bath, after paying extra for linen, and giving a handsome gratuity to the attendant, the grand total amounts to less than a shilling.

Amid all the changes of medical fashion, the baths of Teplitz have maintained their reputation for more than a thousand years, and this for the simple reason that they have constantly effected cures. They are of indisputable efficacy in gout, rheumatism, contractions arising from wounds, and a host of other maladies; so that, besides the great Austrian Military Hospital, the Prussian and Saxon governments think it right to maintain hospitals here for the cure of their soldiers. But if one wishes to have the statistics of their success, and learn whether Teplitz cures a greater proportion of cases than Bath, Wiesbaden, Baden, or Aix-la-Chapelle, I cannot tell where the information is to be found; the *méthode numérique* is still in its infancy, and we are left to conjecture or partiality.

The temperature of the principal spring in Teplitz is 122° of Fahrenheit; those in Schönau are from 99½° to 104°. The water has but little taste, and its solid contents are very small indeed; the chief one being carbonate of soda.

The medical staff at Teplitz last season consisted of fifteen physicians, seven surgeons, and one apothecary. The last has a monopoly. Physicians and surgeons practise where they please; but an apothecary, in Germany, must have a special license for the town where he intends to reside.

As Teplitz is out of the beaten track of English travellers, it is far quieter than many watering-places (those near the Rhine, for instance), and is, consequently, better adapted for some classes of invalids. There are no gaming-tables here, and few late parties; for those who bathe at five or six in the morning are ready to go to bed incredibly early. A theatre where the performance ends at eight, balls in the Garden Saloon, and excursions to the agreeable country around, are the chief amusements.

The *Jardins à l'anglaise*, or parks and shrubberies, in Teplitz and the neighbourhood, are extremely beautiful; the *Schlossgarten* or Castle Garden, behind Prince Clary's chateau, is the finest, and may vie with the best in Europe.

Perhaps it is an advantage that few books are to be found here; those who think otherwise will do well to bring a supply in their trunks. There is no banker in this place, and it is consequently advisable to bring a sufficiency of Austrian money, to escape the heavy profits of the money-changers.

English and French are not very current among the householders of Teplitz; German and Bohemian are the languages of the place. The former often deviates from the *Hochdeutsch*, or standard German, both in pronunciation and in the substitution of provincial words. Thus *heiss* is pronounced *hace* instead of *hice*; cream is called *Schmetten* (from the Slavonian *Smetana*) instead of *Rahm* or *Sahne*; and horseradish *Kren* instead of *Meerrettig*.

I might add much more on the modes of life current at Teplitz, and the sights which strike the stranger who has never before visited Bohemia. The Slavacks, for example—those singular wanderers, picturesque in abject poverty; or I might mention the classic elegance with which women of the lower orders dress their hair, giving this part of their costume the charm of a Greek statue\*; but I will no longer detain my readers from the interesting case narrated by Dr. Ulrich.

University Street, May 2, 1842.

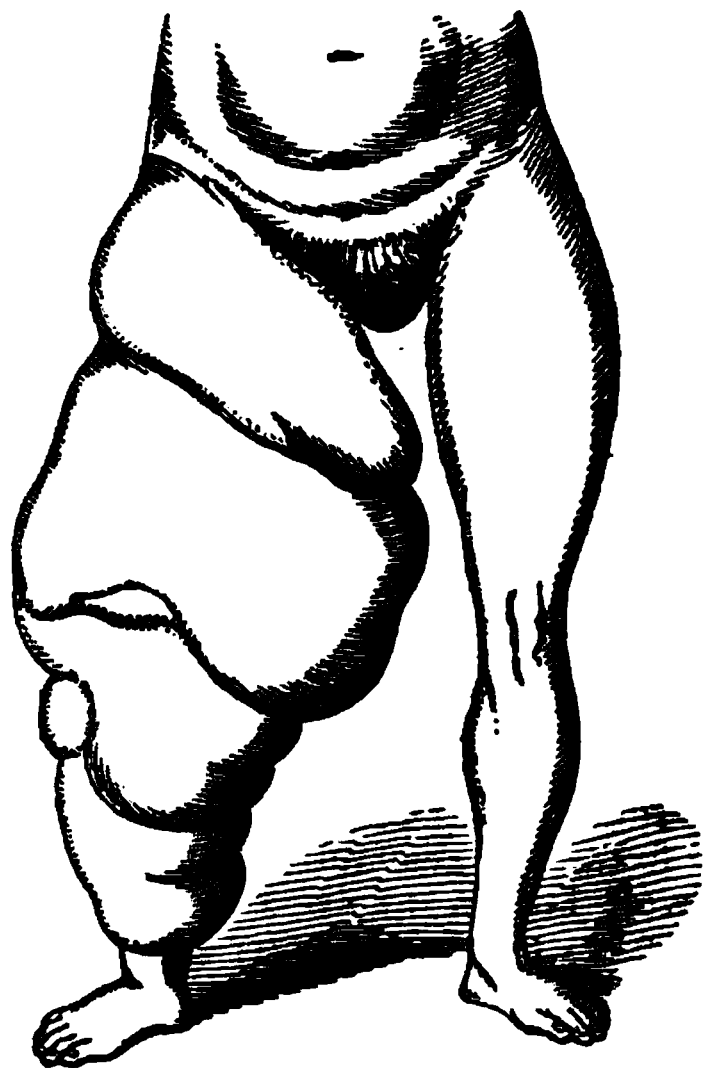
CASE.—Frederica Könert, a servant,

\* Ordnete dann und flocht nach der Sitte der attischen Jungfrau;  
So wie Praxiteles einst und Phidias Mädchen  
des Himmels  
Bildeten.

Voss.-LUISE.

æt. 39, of lymphatico-venous constitution, does not recollect having suffered by any particular disease. She has had two children, with easy deliveries: the catamenia are regular. Several years ago, however, she began to feel pains in her right foot, which were sometimes stabbing, and sometimes tearing. They usually went off spontaneously, and left behind an insignificant swelling of the whole leg; but this, too, always speedily disappeared. During her last pregnancy, the pains in the foot were more frequent than before; and after a safe delivery (eighteen months ago) the foot became thicker throughout its whole length, and gradually attained its present state, when it is a real monstrosity.

Three months ago she came to Teplitz, and entered the hospital which is under my direction, when I found the foot as represented in the drawing; the



patella could hardly be felt. The swelling was firm. Three months' bathing has had no effect, except that the swelling at the knee, particularly the bend of the knee, is softer, and her walk consequently easier. She has had no medicines, as I merely wished to see the effect of the warm bath at 39° of Reaumur (1194° of Fahr.)

She has now left Teplitz, to seek for

aid in the hospital at Dresden, where she will be treated gratuitously, being a native of Saxony. I proposed the treatment by starvation (*Hungerkur*), or an active course of iodine or mercury.

D. ULRICH.

Teplitz, Oct. 12, 1841.

#### MEASUREMENTS.

1. Circumference of the left thigh, from the pubes to the inguinal region, towards the middle of the os ilium, and then back to the pubes, 21½ inches.

2. Circumference of the right thigh at the same place, 28 inches.

3. Circumference of the first break, 35½ inches.

4. Circumference of the second break, 38½ inches.

5. Circumference of the knee-joint, 30 inches.

6. Circumference of the calf, 23½ inches.

7. Circumference of the leg, three inches above the external and internal malleolus, 17 inches.

#### CURIOUS FACTS CONNECTED WITH GESTATION.

*Can the Male exert any influence on the duration of the Fetus in Utero?*

BY JOHN CHARLES HALL, M.D. F.L.S.

Fellow of the Royal Medico-Botanical Society,  
and Member of the Royal College of Surgeons,  
London, &c. &c. &c.

(For the Medical Gazette.)

FACTS connected with gestation are exceedingly difficult to obtain. In the human subject it is hardly possible to determine the precise number of days the foetus has remained in utero; this is well known to every professor of midwifery: in truth, every practitioner is aware that women are very frequently "out in their reckoning," and that the birth of the child takes place in but very few instances at the precise period laid down by the mother; days, and in some cases, even weeks, pass away, before delivery. It is, therefore, only under peculiar circumstances that the precise time can be clearly determined, as in the case related by Dr. Dewees, in his *Compendium of Midwifery*, where "a gentleman who had been obliged to absent himself from his family for many months, returned se-

cretly, and spent one night at home with his wife, in consequence of which she conceived."

The proposed question, as regards the human subject, is rendered more difficult of solution also, from a variety of circumstances which tend to mislead a woman in her calculation. In the case just quoted from the writings of Dr. Dewees, there was a regular return of the catamenia (a week after sexual connexion) in their usual quantity; and this induced her for some time to suppose that she had escaped with impunity. I might quote several other cases to prove that the absence of the menstrual discharge is by no means a certain diagnostic mark of pregnancy. I have more than once met with instances of menstruation occurring after conception had taken place, and others in which it was even more profuse during the first or second months of pregnancy. Johnson, in his *System of Midwifery*, says, "some have the menstrea copiously at the first period." "I have seen," remarks Desormeaux, "some cases in which the appearance of the menses in small quantities, and at an unusual time, was almost a certain sign of conception." The truth of this observation is confirmed by Gardien, Stein, and Puzos. Dr. W. F. Montgomery had a patient, the mother of three children, who informed him that she was always certain of conception "from the profuseness of the next period." Burton writes, "It is well known, by experience, that the menstrual discharge sometimes continues in its usual regularity for two or three months after conception, without any dangerous consequences;" and it is easy to appeal to other authors who would confirm the truth of this remark. It has been objected that these discharges are not menstrual: that is, however, a point foreign to our present inquiry, and therefore the discussion of it is declined: still I venture to observe, that if not menstrual, the discharge is so similar in colour and quantity, and takes place at such regular periods, that neither the woman nor her medical attendant can detect the difference. There are some few instances on record in which these discharges have continued almost during the whole period of pregnancy. Dewees records two cases, a mother and daughter, who were in

the habit of menstruating up to the seventh month. But what says Gardien, in his *Traité des Accouchemens*? "On a vu chez des femmes jeunes et pléthoriques l'évacuation menstruelle continuer pendant les trois ou quatre premiers mois, quelquefois même pendant tout le cours de la grossesse." (P. 489.)

It may be necessary also to mention those remarkable instances where menstruation has either appeared for the first time after conception, or only continued during pregnancy. Perfect's eighteenth case exhibits a curious example of the former; and Baudelocque and others furnish instances of women whose habit it was only to menstruate during pregnancy, and who did so regularly during its whole period, but at no other time.

It must also be remembered that cases occur in practice in which suspicion arises in connexion with a non-appearance of menses; their proper discharge being prevented by some peculiarity in the formation of the sexual organs, but more generally from the imperforate state of the hymen. Frank mentions two cases of this nature, in one of which the abdomen was as much enlarged as in the sixth month of pregnancy, and the female fancied a foreign body had taken possession of her uterus. The enlargement was produced from the accumulation of five or six pounds of dark blood, without any disagreeable odour. In the other case, the poor girl was exposed to temporary loss of reputation; but the hymen was found in the same condition as in the case just quoted, and, when punctured, gave passage to several pints of blood.

Another means usually employed for calculating the duration of pregnancy is equally uncertain: I allude to what is called quickening. I speak of this in the sense in which it is commonly used, for the English law considers the infant, before quickening, as *portio viscerum matris*; as though the spark of vitality was not equally sacred from the moment of conception—as though each process of gestation was unnecessary—as though the Almighty Governor and Creator could design that which was useless, or fail to perfect that which he had begun. In the words of Percival, "to extinguish the first spark of life is a crime of the same nature, both against our Maker and society, as to

destroy an infant, a child, or a man; the regular and successive stages of existence being the ordinances of God, subject alone to his divine will, and appointed by sovereign wisdom and goodness, as the exclusive means of preserving the race and multiplying the enjoyments of mankind." And another writer remarks, with equal force, "The law of the land is at variance with the law of nature, and it is at variance with itself; for it is a strange anomaly that, by the law of real property, an infant *en ventre sa mère* may take an estate from the moment of its conception, and yet be hanged four months afterwards for the crime of its mother."—(*Paris and Fonblanque*.)

In truth it is absurd to suppose, for one moment, that the foetus does not enjoy vitality from the first hour of its existence, and, of course, long before the sensation of quickening is felt by the mother; still it may be asked why indications of life are not given before the time at which quickening is generally said to take place? The obvious answer is, that the absence of this sensation on the part of the mother, as regards the motions of the child, is no proof that they do not exist, for the young foetus may, and in all probability does, move, and yet the parent be unable to distinguish such motions. Of this fact a modern writer (Dr. Montgomery) remarks that "he can speak with certainty."—"A married lady who menstruated for the last time on the 10th of November, came to Dublin in March, on the 21st of which month a consultation was held, to determine whether she was labouring under malignant disease of the womb or not, as she had been previously assured by her medical attendant that she could not be pregnant, 'because she had not sick stomach, nor felt the child.' On examination, the writer (Dr. M.) distinctly felt, through the abdominal parietes, the limbs of the foetus in motion, as did also Mr. Cusack and Dr. Marsh; and yet the lady herself had no consciousness whatever of any such sensation, nor did she quicken till the second week of the following month (April), and was delivered of a healthy boy on the 2d of August."

It is quite clear, therefore, that this symptom of quickening (which I suppose to be produced by the motions of

the child first being felt, and not, as Dr. Royston and others have imagined, to result from the sudden ascent of the uterus out of the pelvic cavity) is of little use in determining precisely the number of days a foetus has remained in utero; for in some cases the motion of the child can be felt by others and not by the mother, and in others it is equally notorious that the women have supposed quickening to have taken place even when conception had not taken place.

For other reasons sufficiently obvious, it will at once appear certain that we cannot supply materials from the human subject for answering, in a satisfactory manner, the question which forms the subject of our present inquiry—can the male exert any influence on the duration of the foetus in utero?

It is therefore requisite that we direct our attention, in the next place, to the inferior tribes of animals, and from them endeavour to derive the necessary information.

My attention was drawn to this subject more particularly a few weeks ago, during a professional visit to the Earl Spencer. His lordship has paid considerable attention to the subject of gestation, and has already written one or two papers replete with facts, I venture to assert, no other man in England could furnish. He asked me "if I thought the bull could exert an influence on the duration of the calf in the uterus of the cow, and if I could remember any work in which the author had mentioned this curious fact?" At the same time, he informed me that "one of his bulls seemed to exert some influence of this nature, for the cows in calf to him went some days longer than those in calf to other bulls." I replied, that I was not aware of any writer who had observed the same thing, and that I would mention the circumstance to a professional friend. I accordingly wrote to Dr. R. Lee, Lecturer on Midwifery at St. George's Hospital, and from him received the following answer:—

"My dear Sir,—The influence of the male parent in the duration of utero-gestation is a very curious fact, and I am not aware that it has been noticed by any one previous to you. I think it so important, that you ought, as soon

as you can arrange the observations, to publish the whole. I cannot find any allusion to the influence of the male parent upon the duration of pregnancy in the lower animals, by Tessier, and think it would be proper, before stating this, to consult his papers. I am very much engaged at present, but hope soon to be sufficiently at leisure to render you any assistance in my power; the doing of which will afford me the greatest pleasure. I have mentioned the fact stated in your letter to several friends, and they have all been very much struck with it.—I remain, my dear sir, with every kind wish,

"Yours very truly,  
"R. LEE."

On receiving the above letter from Dr. Lee, confirming the opinion I had before expressed to Earl Spencer, I requested his Lordship to furnish me with a statement of the facts he had observed. He kindly did so, and I now give them in his lordship's own words:—

"Upon taking," writes Earl Spencer, "an average of seven hundred and sixty-four different periods of gestation of cows, I found that two hundred and eighty-four, or two hundred and eighty-five days ought to be considered the usual period. The male animal by whom the cow was impregnated did not appear to have any influence, up to the time at which this average was taken; but in the autumn of 1840, I bought a bull, which I had sold as a calf in the spring of 1836, and the calves by him were first dropped in the beginning of last August; since then I have had sixteen calves by him, and to my surprise have found that the average period of gestation of the dams of these sixteen calves was two hundred and ninety and a quarter days. Upon this I applied to the gentleman who had bought the bull from me, and from whom I had bought him back, to let me have the period of gestation of each of the cows who bred calves by this bull, while he had him in his possession, and he sent me an account of the respective periods of the gestation of fifty-nine cows in calf by this bull; and I find, that the average period was two hundred and eighty-eight days; and if you add to the periods of gestation of these fifty-nine, the periods of gestation of the sixteen which have occurred since he



has been in my possession, the average of the whole seventy-five is two hundred and eighty-eight days and a half.

"It appears therefore quite clear," continues his Lordship, "that cows in calf to this bull, on the average, are about *four days longer before they calve* than those in calf to other bulls. It appears also that of the 764 cows on which I formed my average in my own herd from a great many different bulls, 185 went less than 281 days, while not one of the 75 cows in calf to this bull have done so. On the other hand, of the 764 cows 111 went above 289 days, or rather more than one-seventh of the number; while by this bull 29 out of the 75 went above 289 days, or between one-third and one-half."

Since the above was written his Lordship has given me the average period of gestation in 931 cows in calf to other bulls; and of 79 cows in calf to the bull in which this peculiarity was first observed, from which it appears perfectly clear that the duration of pregnancy in cows put to this animal, is, on an average, *four or five days longer* than in other bulls. This being the case, it is impossible to account for the fact in any other way than by answering the question proposed at the commencement of this investigation affirmatively, and by concluding that the male can influence the duration of the foetus in utero.

I shall now mention some other facts proving the influence of the male, independently of the female, over the functions of the uterus, and which appear further to strengthen the position I have already endeavoured to maintain

"*Causa statet vis est notissima.*"

In the present advanced state of science it is almost unnecessary to observe, that conception can take place without the knowledge of the woman. The question to be considered is this: can a woman become pregnant in consequence of intercourse of the occurrence of which she was not aware, and thus, finding herself with child, be quite unable to account for it? This at first sight may be considered as quite impossible; nevertheless, as before stated, this fact is established too fully to admit a doubt. Burns remarks "that so absurd a notion, as that conception evidenced consent, should in modern

times have obtained amongst any whose education and intellect were superior to those of an old nurse, is indeed surprising; at this day, however, facts and theory concur to prove that the assentation of nature in this respect is no ways connected with volition of mind." Experience, in fact, has more than once taught that a woman may become with child while in a state of hysteria, under the influence of narcotic poisons, during asphyxia or drunkenness, or during sleep, and therefore, without being conscious that sexual intercourse had taken place. Capuron has recorded an instance of this nature in the person of a young woman got with child while buried in a deep sleep, produced by her drinking freely of some punch which had been given her by the person who caused her ruin. This opinion is supported by Foderé, MM. Marc, and Raige Delorme, as well as by a more recent authority, Dr. Montgomery. Dr. Gooch says, "it is not necessary that the woman should be sensible at the time of impregnation."—"A *maid* at an inn, who was always thought to be virtuous, and bore a good character, began to enlarge in a way which excited suspicions of pregnancy; she solemnly declared that she never had connexion with any man. At length she was delivered, and was afterwards brought before a magistrate to swear to the father, but she repeated her former declaration. Not long afterwards a post-boy confessed that he came one evening late to the inn where the poor girl resided, that he put his horses into the stable and went thence into the house, the inmates of which were all in bed except this girl, who was laying upon the hearth-rug buried in a deep sleep. He contrived to gratify his desires without waking her; and this shews that impregnation may take place without the knowledge of the female."—*Compendium of Midwifery*, pp. 81-2.

Speaking on this subject, a very great authority (Beck) remarks:—"In females habituated to sexual connexion, or where sleep is unnaturally produced, there is no doubt of conception occurring without the knowledge of the female:" and he mentions a very remarkable case in a note, confirming this opinion.

Not to extend this paper by multiplying cases, I shall conclude by men-

tioning the very remarkable one quoted by Bruhier, Foderé, Montgomery, and others from the "*Causes Célèbres*," which proves that the female can be impregnated during a state of complete asphyxia or apparent death.

"A young friar being on a journey, arrived at a house where they were about to bury a young girl, whom they believed to be dead. He proposed to pass the night in the chamber with the coffin, and watch the body. In the course of the night, whilst examining the body, his passions were so excited by the beauty still remaining, that he determined on satisfying them even under such circumstances. He departed early the next morning, and in the course of the day the apparently dead revived, proved to be pregnant, and at the end of nine months brought forth a child to the great amazement of her friends as well as her own. The friar returned to the place about this time, confessed himself the father of the child, and married the mother, having procured absolution from his vows, which he had taken against his will."

It appears, then, from the above facts, that the male can impregnate the female at a period when the latter is in total ignorance of it; and it also appears, from the facts which I have mentioned in the former part of this paper, and which I believe are now brought forward for the first time, that the male can influence the number of days the foetus remains in utero. This, as Dr. R. Lee observes, "is a very curious and a very important fact;" and it will be for other physiologists carefully to inquire into it. I shall, as a matter of course, keep my eye upon the animal here particularly referred to, and see if he continues to influence, as now, the period of gestation. At present it appears quite clear that if a cow becomes impregnated by him, the duration of the foetus in utero will be some days longer than the usual time.

Retford, March 24, 1842.

### HYSTERIA IN A MAN.

*To the Editor of the Medical Gazette.*

SIR,

THE perusal of a case of "Hysteria in a Man," related by Mr. Smee in a recent number of the MEDICAL GA-

ZETTE, called to my recollection a somewhat similar and, I think, equally interesting case, which fell under my notice some months ago, in the Union poor-house of this town.

If you think it worthy a place in your valuable journal, I shall feel obliged by its insertion.—I am, sir,

Your obedient servant,  
G. E. STANGER.

Nottingham, April 19, 1842.

Abel Simons, æt. 19, a robust-looking man, but somewhat deficient in intellect, being one of that class to whom the sobriquet of "*soft*" is vulgarly applied, was seized, soon after eating a hearty dinner, with a violent fit. I was called to him immediately, and found him struggling violently, and held down by five men, who were endeavouring, *vi et armis*, to prevent him from injuring himself.

I was struck with the absence of those symptoms which characterize true epilepsy, and remarked that the same phenomena occurring in a female would, with little hesitation, be set down as a case of violent hysteria. There was no lividity or turgescence of countenance, no foaming at the mouth, nor was the tongue bitten. The pulse continued natural, and the pupils were neither dilated nor contracted. The eyes were in constant motion, and the whole body was kept in violent convulsive action, apparently so long as the strength would allow. He would then remain quiet for a few minutes, and after a longer or shorter period the same violent motions would recur.

The first fit occurred on Tuesday morning. As he was a young man of full habit, and was accustomed to eat enormously, I abstracted 16 ounces of blood from his arm, applied cold to his head, administered an active purge, and ordered him to be restricted to water-gruel.

Notwithstanding these measures, the fits continued, with slight intermissions, until Wednesday night, at which time Dr. Davidson saw him, and concurred with me in the belief that the fits were, in a great measure, under the patient's control. Dr. D. observed, that when he was going to have a fit, if he told him to remain quiet for a short time he would do so. Dr. D. recommended me to attempt to act powerfully on the man's imagination by threatening him

with some very violent remedy, and suggested the trial of a hot poker for that purpose.

Accordingly, on Thursday morning, finding that he had been in fits all night, and had tired out his attendants by his violent struggles, I called the nurse to his bed-side, and desired him to have a poker kept red hot in the fire, and as soon as the fit came on to apply it to a specified part of the back. I added, that though this was a severe measure, and would cause intense pain, it appeared to Dr. Davidson and myself as the only means of curing his malady.

This was said in the hearing of the patient, and, as was anticipated, he never had another fit. On two or three occasions he was on the point of *going off*, but before the poker could be brought to the bed-side, all convulsions had vanished.

I believe that cases somewhat resembling the above are by no means uncommon. They may not present precisely the same features: these may be variously modified, according to the previous habits of the individual, and a variety of contingent circumstances.

It may be difficult to determine the precise pathological condition on which such affections depend. It is not improbable that some morbid condition of the digestive organs in the male, as of the uterus in the female, acting upon a mind little accustomed or able to control its emotions, may account for the disease in question. At any rate, the malady, in both sexes, can scarcely be considered as purely mental or purely physical, but rather as made up of a derangement of both body and mind; and therefore requires a treatment partly moral and partly medical. It is scarcely necessary to remark that we should be on our guard in the management of such cases, and carefully distinguish them from some graver diseases with which they might be confounded.

## ON RESPIRATION.

FROM THE GERMAN OF RUDOLPHI.

BY THOMAS S. BECK,  
Lecturer on Surgery in Sydenham College,  
London.

(For the Medical Gazette.)

If the individual doctrines of the old and new physiologists be compared,

probably there is none in which a greater difference of opinion is remarked than in the doctrine of respiration. A fault very generally committed on one side was, that of considering the vault of the chest, with its muscles, as active; the lungs, on the contrary, as passive: nor was the activity of the larynx and trachea, so very remarkable, at all taken into consideration. On the other side, the peculiar aim of respiration was mistaken, viz. to change the venous blood into arterial, and to support the animal heat. With regard to the first point, it might be maintained that, at present, we understand the mechanism of respiration, and the structure of the co-operating organs, as well as any part of the animal economy; and, in respect to the second, there appear only some points of less importance which remain very doubtful; so that, in truth, we must not reject the examinations of the natural philosopher and the chemist; nor must we content ourselves with the common-place, and, therefore, meaning-less expression—respiration is a vital action; by respiration the blood is idealised; &c.

The organs of respiration may be conveniently divided into external and internal, or into auxiliary and essential. In the animal kingdom the latter remain after the former have long ceased to be found, although, in the lowest animals, they at times appear blended together.

The essential or internal organs are the larynx, the trachea, and the lungs; the external or auxiliary organs, the nose, the mouth, the vault of the chest, and all parts contributing to its change.

In animals breathing by lungs the air is commonly drawn through the nose. We see the play of the nostrils especially in the amphibia; but also in birds. In the mammalia, we not unfrequently see the alæ of the nose become most violently moved after exertion; and there are several in this class that can only breathe through the nose—as the race-horse, the elephant, and the cetacei. Man, with a perfectly free nose, breathes through it when asleep; but with the passage of the nose somewhat obstructed, respiration takes place by the mouth remaining open: thus the velum palati trembles, and there arises an unpleasant snoring (stertor). But, on the contrary, respiration can go

on by the mouth alone; and I have already mentioned some examples in man, where the posterior nostrils were entirely closed, so that respiration was only possible through the mouth.

To what extent the opening of the mouth stands in connection with respiration in man, is seen by gaping (oscitatis) after weariness, or any difficulty of breathing. Here the mouth is strongly opened, and long kept open, during which the larynx and the chest are widened, in order to inspire strongly and deeply; after which a strong expiration takes place. We also see the connection in the last respirations of the dying, as well as in the attempts at resuscitation; when, if it entirely or partly succeeds, a slight opening of the mouth occurs, then a gaping, or, as we usually call it, "snapping after air." Now and then all our endeavours are unable to produce more than a gaping similar to that with which life is entirely extinguished. This readily explains the first respiration; for from the unpleasant impressions to which children are exposed during birth, and immediately after it, their facial muscles begin to move; the mouth and nose open, and involuntarily draw in air, so that a cry is excited: the same happens if they come into the world asphytic; when, by shaking, or some light strokes, we call them into life, so that they breathe and cry.

These movements evidently stand in connection with those by which the cavity of the chest becomes expanded, and upon which others again follow which contract it. The powers which contribute to the movements are very manifold, and are only collectively called into action in cases of the greatest necessity.

The expansion of the chest, in the first place, is occasioned by the ribs becoming raised upwards and outwards, by which the sternum is also moved forwards; whilst, secondarily, the diaphragm contracts, and thereby descends. By these movements the long and transverse diameter of the chest becomes enlarged, i. e. from one side to the other, from the front to the back, and also the oblique measurement. The front rib, which is firmly bound to the sternum by a short cartilage, and more firmly fastened than the other ribs by the scaleni and other stronger ligaments, is to be looked upon as the fixed point

towards which the other ribs are drawn and rolled forwards and outwards, so that the sternum must necessarily come forward. This is principally effected by the intercostal muscles, as well by the internal as the fibres of these muscles crossing each other: their power must be considered as acting diagonally upwards: the second rib is already freer than the first, which is the same with others, so that they progressively become easier raised. If the customary enlargement of the chest by the intercostal muscles be not sufficient, the greater and lesser pectoral, the anterior and superior posterior serrati, and indirectly the several muscles of the vertebral column and scapula, contribute to the expansion of the chest.

The action of the intercostal muscles opposes the contraction of the cavity of the chest; but the last-named muscles, on the contrary, are opposed by the latissimus dorsi, the inferior posterior serrati, and several muscles of the vertebral column.

With these muscles serving for the expansion of the chest, the diaphragm now co-operates most powerfully. It contracts from all sides towards the centre, by which it descends, becomes flat, and presses the abdominal viscera downwards and forwards. The abdominal muscles which are opposed to its action draw the ribs downwards and themselves inwards, thus narrowing the abdominal cavity, and pressing the viscera up towards the relaxed diaphragm.

In the child and in the woman the mobility of the ribs, &c. is very great; and we see, when they are perfectly quiet, or asleep, how their chest rises and falls. In man, whose chest is more capacious, and therefore ordinary respiration requiring no great expansion, that movement is much less seen; so that, for the most part, the alternate action of the diaphragm and abdominal muscles appears to be sufficient.

Obs. 1.—Whilst the amphibia draws in the air through the nostrils, it is conveyed, by the incessant movements of the membrane of the throat, to the open glottis, and is received by it: hence the movements of the throat are much more frequent than those of the nose; and bear the proportion to them of three to five, or even of seven to one. However, we must not estimate the number of respirations according to

the former, with Townson (*Observations Physiological de Amphibiis de Respiration*, Gott. 1794), by which he arrived at a false position, viz. that the amphibia inspire more frequently than the warm-blooded animals.

Herboldt maintained that the mouths in frogs must remain hermetically closed when they breathe; and that if their mouth be held open by a small ring or a piece of wood, they soon died. The Philomatic Society in Paris (*Bulletin*, An. 7) repeated these experiments, and found that the animals died in a few minutes if their mouths were not hermetically closed. I thought this very improbable, and repeated the experiments in a variety of ways in the same year; and found that frogs continued to live perfectly well, with their mouths open, hours, days, and weeks. I cannot think otherwise than that Herboldt and the Philomatic Society have placed their animals with the mouth open, in water, where they certainly must soon be drowned; instead of which I kept them in a box, placed in the garden, in the open air.

Obs. 2.—Sir C. Bell (*An Exposition of the Natural System of the Nerves*, London, 1824-8) has justly connected the movements of the countenance, in the emotions of the mind, with those of respiration. If some have been too strongly expressed by him, those who pay no attention to this will not be able to form any complete idea of breathing in general, especially of the first respiration, and of the modifications of respiration from the emotions of the mind.

Obs. 3.—It is a mere paradox, when Magendie, contrary to Haller and all other anatomists and physiologists, admits the movement of the first rib to be greater than that of the following; for if he only undertakes to examine, without prejudice, the ligaments and muscles of the first rib, he must immediately retract his false views, which can only have arisen in the study, or in a transitory observation of an artificial skeleton. Whence comes it that the first rib so very often morbidly adheres to the sternum, if it be not because it lies almost immoveable upon it; whilst the sternum and clavicle are scarcely ever ankylosed, from the movement between them being greater?

Obs. 4.—The movements of the chest in the mammalia are probably exactly

the same as in man; and we see this in a very strong degree in the so-named "beating of the flanks," especially in the horse. In all, the diaphragm and abdominal muscles perform the same functions; but not unfrequently the cartilages of the ribs become ossified very early, by which they resemble birds; in whom, as far as I know, it is without exception. In our museum there are skeletons of the ornithorinchus; of the three-toed sloth; of the ant-eater; *myrmecophaga jubata*; *tetradactyla*, and *didactyla dasypus sexcinctus*, of two vampires, of a couple of opossums, of an old *dispus sagitta* (for in the other skeletons of *dipus* and *meriones* it is not), of an old mole, and of *chrysochlorus*, which are provided with intervening bones instead of the cartilages of the ribs. In some of the last named animals the ossification appears not to have occurred so early as in the others. The difficulty of the cartilages of the ribs (except the first) becoming ossified in man is generally known. Indeed, we have the example of Thomas Parr, who was a hundred and fifty-two years and nine months old; and in whose body the renowned Harvey found those cartilages unossified. The whole of this remarkable dissection is found in *I. Bettus de Orta et Natura Sanguinis*. London, 1669.

[To be continued.]

#### FURTHER NOTICE CONCERNING THE AMMONIACO-TARTRITE.

*To the Editor of the Medical Gazette.*

SIR,

ABOUT ten years ago I introduced to the notice of the profession in your valuable journal (*MEDICAL GAZETTE*, No. 187, July 1831,) a preparation of iron somewhat differing from any hitherto employed, which appeared to me to possess some useful properties almost peculiar to itself. The salt is the ammonio-tartrite of iron, or tartrite of iron saturated with ammonia, forming a triple salt of pretty uniform composition; and I described the method of preparing it, which, with moderate quantities, is simple, easy, and, as far as I find, unfailing. It was suggested to me by an observation in Klaproth's *Essays on Mineral Analysis* (that mine



of valuable information to the practical chemist), that the presence of a certain proportion of tartaric acid in any of the solutions of iron entirely prevents the precipitation of the metallic oxide by any alkali, pure or carbonated, and in any excess. Now as several of the most useful salts of iron have the inconvenience of letting fall part of the metal either as a peroxide or a sub-salt on saturation with alkali, or exposure to air, or even by long keeping, the tartaric acid suggested itself to me as the most useful medium for preserving this metallic oxide unchanged for medicinal purposes. But the simple salt of oxide of iron and tartaric acid when in mutual saturation, forms a tasteless mass, nearly insoluble in water, and only to be exhibited in the form of powder, which much limits its utility. This is avoided by saturating the tartrite of iron with ammonia, in the manner I have described in my first notice. The triple salt thus obtained is a uniform red brittle uncrystallized mass, which does not deliquesce in the open air, and which dissolves most readily and copiously in distilled water into a blood-red solution, the clearness of which is not disturbed by alkalies or alkaline salts, and, with the help of a little spirit of wine, will keep unchanged for a length of time. It has a strong, not unpleasant sweetness of taste, much resembling that of liquorice, which nearly overpowers the chalybeate, and in general is highly palatable to young children—an advantage which is not to be despised when a course of tonic medicine is to be persevered in with these capricious subjects. It also mixes very well with porter, when, as is often the case, this valuable domestic tonic is called into aid.

But the object of my present notice is to state, that I have also long found this salt to mix, without visible decomposition or deposition of oxide, with both the tincture of iodine and the ioduret of potassium; and this appears to me to supply a formula for a compound still wanted, and which is done with difficulty in using the otherwise valuable ioduret of iron introduced to practice by Dr. A. T. Thomson. The respective solutions of the ammonio-tartrite of iron and of the preparation of iodine, whichever may be preferred, may either be kept separate till the time of making up the prescription, or previously mixed,

in any required proportion, in a phial with a *glass* stopper (not cork), and added to any simple water, or to decoction of sarsaparilla, for example, or to a variety of other articles of the Pharmacopœia.

I may add, that as my first notice of this salt was made before the publication of the last edition of the Pharmacopœia Londinensis, the editor was inclined to introduce it; but he preferred the analogous salt of tartrate of iron and potash, I believe, as being prepared in the large way with more ease than the ammoniacal salt. The present potassio-tartrite of iron is equally miscible with alkalies without decomposition; nor is it disturbed by the salts of iodine; but it has not the sweet liquorice taste of the other, and, what is of more importance, it is highly deliquescent; so that it cannot be employed in the form of powder, and the weighing of it is attended with some little inconvenience.

The effect of sugar in depriving metallic solutions of oxygen, wholly or in part, is well known to chemists. Thus the acetite of copper, boiled with sugar, gives a brown protoxyd of copper; sulphate of copper, in like manner, lets fall part of the metal in the metallic state. The salts of iron may long be kept, by this means, in low oxidation, and by the assistance of tartaric acid may be saturated with alkali without apparent change.

In this way a very useful *syrupus ferri* may be prepared with great ease, thus:—

In a Wedgewood evaporating dish dissolve 80 grains of sulphate of iron and 40 grains of acid of tartar in an ounce and a half of distilled water. Add liquid caustic ammonia, which first gives an olive-green precipitate that redissolves by a small excess of the alkali, to a clear grass-green liquid. Evaporate this slowly, nearly to dryness; then redissolve in water, with a few drops more of the alkali, and make up the quantity to a fluid ounce and a half. Add to this two ounces of sugar, and boil briskly for a minute or two, and the syrup is made. These quantities furnish about two ounces and a half of a very dark, clear, hair-brown syrup, which readily dissolves in water without becoming turbid. The syrup may be made in one vessel in a very short time; and it appears to keep for

an indefinite length of time without fermenting or changing in any way. In the proportions here given one drachm of the syrup contains four grains of the sulphate of iron mixed with tartrate of ammonia.—I am, sir,

Your obedient servant,  
C. R. Aikin.

7, Bloomsbury Square,  
May 1, 1842.

### LANCET WOUNDS—PHLEBITIS.

*To the Editor of the Medical Gazette.*

SIR,

NEARLY two years have elapsed since a fatal case of phlebitis occurred to me. A short time previously another fatal case occurred—both in Malta. Whether any peculiar state of the air had an influence in producing the malady, I do not know; but in the case to which I particularly allude, the patient had for several years laboured under symptoms of angina pectoris, and been repeatedly bled for paroxysms of that disease. His habits were intemperate, and he had been complaining of a peculiar pain and anxiety in the region of the heart for several days, when I was induced to abstract a considerable quantity of blood from the arm—means which had previously afforded him decided benefit. The blood flowed in a very full stream, and it was found impracticable to check the hæmorrhage by means of the ordinary sized compress and bandage. The roller therefore was applied more extensively, so as at length to suppress the bleeding. He was relieved by the operation; and as no complaint was made of the arm, it was not re-examined till about a week afterwards, when the patient, who was hospital sergeant of 59th regiment, complained of pain in the site of the wound. Upon examination it was found to be irritated and slightly inflamed, with tumefied edges, but not to a greater extent than I had before observed in a vein without producing any serious inconvenience. Some diaphoretic medicine was prescribed, and simple dressing applied to the wound. Next morning violent rigors supervened, which were followed by unequivocal symptoms of phlebitis. Leeches were numerously applied to the bend of the arm, and

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mercurial medicines administered, with fomentations from the hand upwards; but in vain: the disease rapidly ran on to a fatal termination.

I have not the notes before me at present, and therefore can give no detailed account of the case; but the question I feel constrained to ask is, whether the mischief may not have in part originated in undue pressure upon the vein, from the bandage not having been carried up from the fingers, but merely being placed round the elbow-joint, in a person predisposed to disease of the vascular system, and where the *vis medicatrix nature* was too weak to repair even a slight solution of continuity. I have invariably, since this unfortunate case, taken particular care to examine the lancet wounds after bleeding, and to dress them appropriately every day till suchtime as union may have taken place; and I would consider this practice more essential where there is difficulty in arresting the hæmorrhage, which would appear to arise from impaired vital properties. I hope this hasty communication may be of service in attracting the attention of my younger brethren to lancet-wounds, and induce them to pay the utmost attention to them in every case, but particularly in unhealthy constitutions.—I am, sir,

Your obedient servant,  
J. MAIR, M.D.

London, April 30, 1842.

### THE CHIGOE, OR GIGGER.

A FRAGMENT FROM A DIARY KEPT IN THE  
WEST INDIES,

BY FREDERIC ROBERTS,  
Assistant-Surgeon 59th Regiment.

(For the Medical Gazette.)

As medical authors give no account of the chigoe, which becomes so often parasitic to man, and a source of considerable annoyance to him in the West Indies, and as it has further been doubted to be an insect, the following short paper, containing the slender information that could be gathered from a few examinations of cases, respecting the habits, effects on the body of man, and treatment for its removal, is offered.

The "chigoe," or "chiego," of the

West Indies, and the "pulex penetrans" of naturalists, consists of two species, the *black* and the *white*, in the natural history of which there appears to be no difference. The habitation of the "gigger," as it is likewise called, is in stables, kitchens, and on the ground in the open air in dry weather, which is the season it mostly prevails in—that is, from December to July. It attaches itself to the feet of those who walk about bare-footed, and those whose occupations are in kitchens, abounding in ashes and other filth. Holes in boots or shoes render one liable to be attacked by them. Its intrusions are not confined to the human species, but it is found to attach itself to cats, dogs, sheep, and still more to pigs.

The parts of the body it is found in are the soles of the feet and toes, and occasionally the fingers. It insinuates itself underneath the skin, and there deposits its eggs in a nidus of a tough gelatinous substance. Attention is first drawn to the presence of these insects by a gentle itching, which, as the insect insinuates itself deeper, and the nidus begins to grow, becomes, in a few days, less tolerable. The nidus, containing longish-shaped white gelatinous eggs, is a cyst of a tough membrane, and arrives sometimes to the size of a pea before the eggs are hatched, after which the new being likewise insinuates itself into the skin; so that in those who neglect extracting them there are clusters, buried under the skin of the soles of the feet and toes, which raise it in little round eminences, and create irritable sores, oozing a serous fluid, and ultimately intractable ulcers—nay, the entire toe has been known to be lost by the creeping ulceration that is established. The *black* gigger differs so much in its effects from the *white*, to which, it has been said, it otherwise resembles, as to be called the *poisonous* gigger, and produces much more malignant sores. The treatment for the removal of the chigoe consists in extraction by means of a needle—an operation dexterously performed by the negroes, and free from pain.

Regent Fort, Jersey, April 25, 1842.

## INJECTION OF AIR INTO THE EUSTACHIAN TUBE.

*To the Editor of the Medical Gazette.*

SIR,

SOME few years have now elapsed since the operation of injecting air into the Eustachian has been brought before the public: indeed it has been performed, or at least has been *attempted*, on some hundreds of individuals in this metropolis, and yet not a single case has been essentially and permanently benefited by it. Some have stated that they *thought* they had seen benefit from it, but it could not be positively affirmed; while the evils resulting from its application have been sufficient to render us exceedingly cautious in advising any patient to submit to it.

Amongst the bad effects produced by this air-douche may be enumerated inflammation of the throat and Eustachian tube, and also of the tympanum, which is sometimes so severe as to terminate in suppuration; emphysema, caused by laceration of the mucous membrane of the Eustachian tube, or of the posterior nares; rupture of the membrana tympani; deliquium, which, in some instances, has continued so long as to threaten life; and even death itself has occurred before the instrument could be removed which produced so awful a calamity.

When consulted by a patient as to the expediency of his submitting to this operation, these facts should be fairly and faithfully considered; and as most men in London must have seen sufficient to convince them of the inutility of the air-douche, it will be but prudent to advise a patient of its disadvantages and risks. Aware that some extraordinary effects have been reported from the north, yet viewing cautiously itinerants' wonders, and suspiciously the details of *medical* statistics, in *non-medical* works, we pass these by.

Probably some will read these remarks who have themselves undergone, or have believed they have submitted to, this operation, and may regard the dangers just detailed as imaginary, or to have been the result of want of manual dexterity; but these accidents have occurred in this country as well as in France and Germany, and it were

much to be wished that those who have advocated the advantages of this operation would be sufficiently candid to detail its evils.

We all know with how much zeal new medicines and new operations are seized upon by medical men; and to hear the accounts of these novelties, one would imagine that all diseases must speedily succumb to these enlightened, because modern, discoveries; but a few months roll away, the charm is dispelled, and the ephemeral improvements are forgotten.

This operation of injecting air into the Eustachian tube has been tried, and that, too, extensively, both in this and other countries; and with what result? Scarcely any but that which was injurious. In the *MED. GAZETTE* will be found the minute details of some cases, which should carry conviction wherever those statements are read. Itard has found it altogether useless: and when employed by Deleau himself, it produced the opposite effects to those he had intended.

Aware that many persons are said to have been cured by this air-douche, I would ask whether any new remedy was ever brought forward which had not been supposed to have cured numerous individuals. These patients themselves believed they were cured *by the operation*, because they regained their hearing; but the cause of their deafness might have been temporary, and might probably have been removed by the application of a blister and a little aperient medicine. But the patient is surely not a person the best capable of estimating the particular disease of the ear under which he laboured, and whether the operation he had undergone was essential for the cure of his particular case. We all know how frequently a patient fancies he sees the good or bad effects of a placebo; and admitting this, it is not difficult to imagine that patients may be mistaken respecting the effects of this air-douche.

It will be well here to review this operation. The air-press has not been inaptly compared to the air-gun; in fact it is constructed upon the very same principle: there is a condensing syringe and a reservoir, to which is attached a flexible tube with a stop-cock; and, in fact, upon this stop-cock depends the life or death of the patient undergoing the operation. This

is not mere matter of opinion, but is well known as matter of fact; that is, patients have actually died from too sudden and too large a quantity of condensed air being allowed to pass through the stop-cock of the flexible tube just described. A small silver catheter is passed through the inferior meatus of the nose into the Eustachian tube, and to it is accurately fitted the long flexible tube, so that a direct communication is effected between the Eustachian tube and the condenser. Sir John Robison, of Edinburgh, has been exerting his mechanical ingenuity to remedy the uncontrollable escape of condensed air from this dangerous apparatus; and Sir John himself considers he has overcome the difficulty, but others are of a different opinion.

Now what are the cases in which it is proposed to employ this air-douche. Most frequently it is advised when the Eustachian tube is imperforate; whether this canal has been temporarily or permanently obliterated by hardened mucus, or by repeated attacks of inflammation. If any other mucous canal, such, for instance, as the urethra, were partially or completely closed, is the injection of air the means we should employ to remove this stricture, or to subdue any inflammation which might still remain? If we had recourse to any mechanical means, should we not with much more propriety inject warm water? And why should we not employ the same treatment in removing an obstruction in a tube lined by a similar membrane?

It may be thought from these remarks that I advocate the injection of warm water into the Eustachian tube in all cases where it is closed; and sorry should I be if such an inference were drawn, because I am more and more convinced that operations of any kind are seldom of any use where deafness has continued for any great length of time.

I may perhaps be censured for stating that most of the cases of deafness which have come under my care have resulted from the negligence of the practitioners under whom the patients were placed when they first evidenced symptoms of deafness. Nor can I be surprised at this when I know that few of the surgical lecturers ever even advert to the subject, nor do the pupils interest themselves in any aural investigations.

Medical men have made up their minds that nothing, or next to nothing, can be done for deafness; and when a case devolves on them, they either treat it empirically, or at once send the patient to a professed quack, seldom taking the trouble to accompany him for a consultation, as they would readily do were the same patient's heart or lungs affected; and although we could scarcely put the one in competition with the other, yet it must be confessed that deafness is too great an evil to be so lightly regarded.

Of the cases of deafness which have come under my notice, a great majority have been the result of partial or complete obstruction of the Eustachian tube; and in most of these cases the patients have suffered severely from scarlet fever, or from a chronic inflammation of the fauces with enlargement of the tonsils. Now these two affections have caused more than two-thirds of all the cases of deafness which I have seen; and it is in the early treatment of such patients that the negligence to which I just adverted is so unhappily evidenced.

When a patient is convalescing after scarlet fever, he frequently complains of deafness, which, it is generally presumed, will "go off" as the patient gains strength; and frequently the hearing does return, but very often it does not. The remedial means usually adopted in such a case consist in the administration of bitters, the use of an astringent gargle, and in some few instances a blister has been ordered behind the ear; and even with this simple treatment some cases get well, which possibly would not had no such means been adopted. But surely when the inflammatory sore throat has been severe, and when the tonsils are nearly doubled in size, and offer either that hard and cartilaginous feel, or exhibit the soft spongy state which is well known to those who take the trouble to inquire into these matters, in such a case the treatment just described cannot be sufficient to prevent a permanent sealing up of the Eustachian tube. It is in these cases I have found iodine of the greatest possible service, when it has been employed early; and I feel convinced that if promptly exhibited internally, and applied externally, in recent cases, that many hundreds of persons will have the sense

of hearing preserved to them who would unquestionably fall martyrs were nature allowed to take her own course.

The iodine should be given with the hydriodate of potass, and should be combined with such other medicines as the state of the patient's health at the time indicates. I more frequently give it in combination with the compound decoction of sarsaparilla. The tonsils should, twice or thrice daily, be painted with the tincture of iodine, the strength of the tincture depending upon the general inaction of the part. Generally, three, four, or five weeks will elapse before the full effect of the iodine is produced.

I can speak more confidently of this remedy than of any other I have employed in diseases of the ear, and therefore hope that medical men will give it a fair trial in any such cases as may come under their notice. If deafness is to be relieved it must be done in a very early stage: and although patients are operated upon with the most solemn assurances of success, yet, with but few exceptions, do these operations ever succeed.

It is no uncommon thing, for deaf persons to come up from the country to undergo the *new* operation. The patient, generally very timid, is seated for the operation, and is surprised when it is finished, at having suffered little or no inconvenience: she is told she hears better, and from the fright she has laboured under her whole nervous system is excited, and she does in consequence really hear better for half an hour; but she will say, "it soon went off." Now this person imagines she has submitted to the operation, and is to be again subjected to it on the second or third day. This is repeated four or five times, when the patient, finding four or five guineas have disappeared, and that the hearing is not at all improved, takes her leave. Ask such a person if she has been sensible of air being forced into the tympanum; if she tell you no, and that she merely felt a gurgling noise in her throat, be assured no air has been forced through the Eustachian tube. If there be a stricture in this tube, the quantity of condensed air necessary to force for itself a passage is sufficient to produce the most alarming consequences.

It is from these unpleasant effects that the operation is now so often in-



completely performed. In many instances the air is not condensed, but is merely pumped in as required; and, in fact, for such a purpose, the simple action of blowing into the Eustachian tube from the mouth would be much more convenient and safe than any mechanical instrument.

The alarming symptoms which not unfrequently follow this operation are very often unknown to the operator; as the patient goes home, and in a few hours complains of giddiness: deep-seated pain in the head supervenes, the usual medical attendant is called in, and has found all his resources unable to subdue the inflammation.

If this operation be *ever* justifiable, it is yet manifestly improper if the patient have for any length of time suffered pain in the ear, the more especially if there have been chronic discharge; and yet we have been informed of such a case. The patient was operated upon on a Saturday, *and died on Wednesday*. There was no autopsy. Her symptoms, as described by a non-professional person, indicated suppuration of the brain.

It is very difficult to collect these unfortunate results, and if any member of the profession will send to the medical journals well-authenticated details of these unhappy cases, he will be conferring a real favour upon the profession, and which will be ultimately of essential service to the public.

We have never had an opportunity of examining the ear or brain of any person who has died soon after submitting to the air-douche, *but we believe the baneful effects may sometimes arise from the direct pressure of air upon the brain*; collapse being induced by the severe and sudden pressure to which the brain is exposed. In other cases, when a few days intervene between the operation and the death of the patient, inflammation has probably been induced in the labyrinth, which, extending along its lining membrane, is easily transmitted to the membranes of the brain; exactly in the same way as peritonitis would ensue were some cases of hydrocele to be improperly treated by the injection of stimulants, when the tunica vaginalis remains open. It is, doubtless, in this way that so many persons lose their lives, who have stimulants injected heedlessly into the ears; for there can be but little doubt

that the lining membrane of the labyrinth is a continuation of the dura mater and arachnoid; the labyrinthine portion being partially excluded, although not altogether shut out, from the splanchnic cavity, by the gradual deposition of ossific matter around the ducts of the vestibule and cochlea. Where inflammation of the internal ear has existed for any length of time, it is well known that a communication almost invariably takes place between the external and internal ear, by the absorption of the membranes which cover the fenestræ vestibuli et cochlea. Now it is when this communication really exists that these injections into the ear are doubly dangerous, as air might without any great power being used be forced into the cavity of the cranium. It must also be remembered, that even yet it is an undecided point whether or not these aqueducts are for the purpose of allowing the superabundant fluid of the labyrinth to escape into the cranium when undulating too powerfully; and although opposed to the opinion of Brugnone, Ribes, and Breschet, yet we have some modern and scientific anatomists who hold the opinion of Cotugno, which is certainly supported by the fact that these aqueducts are almost invariably present; which regularity would not be so constant were they merely for the transmission of blood-vessels. Now, supposing this fluid in the *natural* state to be so easily pressed into the cranium, merely by a somewhat louder sound than usual, only conceive, when these membranes have been removed by disease, and a direct communication exists between the external ear and the cavity of the cranium, *what must be the effect of the powerful air-press*. However, it is useless to speculate any longer upon this subject, our object having been to direct the attention of the profession to this dangerous operation—a danger which has, in some instances, *immediately* supervened, and has been the subject of investigation before her Majesty's coroners. And in other cases the same unhappy results have been as certainly, though more tardily, induced, without its having reached the ears of those who had performed this operation.

We would, therefore, endeavour to impress upon the profession the following inferences. That this operation of

injecting air into the Eustachian tube has been of *no* benefit, or it was of so extremely questionable a character as to leave an uncertainty in the minds of both the patient and operator;—that when this operation has been performed, it has often caused unpleasant, alarming, and dangerous symptoms, nay, even death itself—and, that in consequence of these dangerous effects, the operation is now so far *modified* as to be of little or no service in removing an obstruction in the Eustachian tube, or of benefiting those cases in which Deleau has so highly recommended it.

I am, sir,

Your obedient servant,

MEDICUS.

April 21, 1842.

## MEDICAL GAZETTE.

Friday, May 6, 1842.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

### CONTAGION AND QUARANTINE.

FROM a notice in the preceding number of the journal, our readers will have learned that at a recent meeting of the Medico-Chirurgical Society, the question of contagion and quarantine was brought forward, and elicited, as usual on all such occasions, the most singular diversities of opinion among those who took part in the discussion. It is certainly a remarkable circumstance, that in these days of pathological accuracy, when we boast, and justly boast, of our correctness in diagnosis, when we labour diligently and most successfully to develop the origin of diseased actions, in the several structures of the body, when a general accordance exists as to the effects of diseased actions, and a high importance is every where and by an universal assent attached to the study of morbid anatomy, there should be, at the same time, the most unaccountable diversities of opinion with

regard to the exciting causes of disease, and more especially of acute disease. The doctrine of contagion has proved a perfect apple of discord to the profession of physic. Whoever threw it first down, and this, as a matter of course, has been a fiercely-contested point, did more to embroil the medical profession, and has been the cause of more waste of pen, ink, and paper, than any controversialist from the days of Hippocrates downwards. We are about to shed a little more ink in the same great cause, but we do so without the smallest hope that what we are going to say will reconcile conflicting sentiments, or perceptibly lessen the annual amount of contributions to this *vezata questio*. We feel quite convinced that a hundred years hence the Gazettes and Lancets of those days will teem with papers on epidemic and non-contagious influence. The then existing supporters of contagion will be looked upon as men lagging behind in the march of intellectual improvement, as followers of an idle fantasy of the brain, incapable of proof; as well-meaning, but weak-minded and prejudiced pathologists. To all this we have quite made up our minds. Nevertheless, with our eyes wide open to the certain consequences of our labours, we still deem it advisable to add a few words more to the already innumerable effusions on the subject of contagion.

We marvel much at the tone and temper with which this controversy has been too generally conducted. A certain class of pathologists have imbibed a sort of instinctive horror at the notion of contagion. They have considered it as beneath the dignity of a scientific man to acknowledge such an influence. They have reasoned as if there were some confession of intellectual inferiority attached to the holding of such an opinion, and an emancipation from vulgar prejudices in the

avowal of anti-contagious notions. Such men would, we sincerely believe, experience a sense of shame in acknowledging the doctrine of infectious agency. That such feelings as these do exist widely throughout the world, more, perhaps, on the Continent than here, we are well convinced, and it is hard to account for such a circumstance. There seems nothing, *per se*, very revolting to common sense in the notion that the secretions of the body, in certain disorders, throw off emanations which, received into the lungs, and impregnating the blood of another person, should produce in him a like disease. Yet the great aim and object of certain parties has been to disavow such a principle, wherever, by any ingenuity, it was possible to adopt some other explanation,—never to admit such a doctrine except as a last resort in ætiological difficulty, and then to throw all possible discredit upon it.

The doctrine of a contagious and infectious quality is conceded to small-pox and to measles, by almost all pathologists, a large proportion of whom are ready to extend the same attributes to scarlet-fever and hooping-cough. Very many draw their line of demarcation here, and, like Falstaff with his ragged regiment, refuse to march a step further with the contagionists. A certain number, however, are content to include typhus fever, puerperal peritonitis, and the Egyptian plague, in the category of contagious maladies. From this point the non-contents have it pretty much their own way. The doctrine of a contagious quality inherent in the morbid secretions of cholera, of yellow fever, of erysipelas, and of influenza, makes some of them perfectly frantic, while the suggestion that perhaps the secretions may be similarly endowed in cases of phthisis pulmonalis, croup, or dysentery, is met with a look of ineffable contempt, mixed with pity.

It has always appeared to us that the doctrine of contagion and infection has been viewed by medical writers in too isolated a manner; that to arrive at correct conclusions on the subject, capable of any wide application in nature, we should commence with the simplest form of diseased secretion capable of communication from one individual to another of the same species (of which psora offers the best illustration), and trace the doctrine up to those more aggravated forms of disease, such as small-pox, where the whole mass of the body, the blood, the secretions and humours of the lungs; as well as of the skin, and perhaps the solids themselves, participate in this communicating or contagious quality; and that, not to individuals of their own kind only, but to the lower orders of animals; and by such *intensity* of infectious property convince the most sceptical of the truth of the doctrine. If we follow up this notion we shall have no difficulty in attaching the notion of a contagious quality not merely to the secretions of tinea capitis, of gonorrhœa, and of syphilis, but also to those of the jaws and of the malignant whitlow, to the purulent secretions of ophthalmic and certain other inflammations, to the vesicular secretions of erysipelas and varicella, and to the morbid products of the lungs, throat, and skin, in cases of hooping-cough, measles, and scarlet fever.

Entertaining these general impressions on the subject of contagion and infection, as applicable to various acute diseases where the secretions of the body are palpably affected, it cannot be a matter of surprise that we are strenuous supporters of the contagious nature of the Turkish plague. If ever a disease existed calculated *à priori* to throw off contagious emanations, this is it. It is a peracute form of fever of most malignant character, rapidly affecting the

nervous and circulating systems, and curiously altering the coagulable and other qualities of the blood. The best chance for the preservation of life under such a malady is afforded in the abundant discharge of buboes; presenting thus an analogy to the progress of variola as close as can reasonably be expected.

The objections to the notion of contagion, as inherent in the secretions of Turkish plague, are chiefly the following:—It is argued that the disease is obedient to the laws of epidemics—that it has its seasons of access, of culmination, and decline. This is undoubtedly most true, and most important with reference to practical measures; but epidemic influence is not opposed to, or incompatible with, a contagious or infectious quality of the fluids. The two circumstances coexist here, as they equally do in small-pox, measles, and scarlet fever. It is farther contended that medical men have exposed themselves freely and with impunity to the infected atmosphere of a plague hospital. True some have done so; others have been less fortunate. A thousand men go into action. All are alike exposed to the danger, but only a certain proportion fall victims to the shot and shells of the enemy.

The third argument of the anti-contagionist party is, that plague is not found to spread on the European Continent, though commercial intercourse with Egypt augments annually. Historical facts, however, are opposed to this statement. Plague spread at Marseilles in 1720, at Moscow in 1770, at Malta in 1813, in the Ionian Islands in 1818.

While we thus acknowledge our firm belief in the contagious qualities of the secretions that form in persons labouring under Turkish plague, and our equally strong conviction that the clothes, and bedding, and bed-furniture

of plague patients, may sometimes harbour such diseased secretions, and renew the disorder after a certain interval, either in the same or in a distant locality, we are perfectly ready to admit that the Quarantine laws, as now administered in the Mediterranean, are framed upon very mistaken views of the laws of pestilential contagion. The shortness of the incubative stage is not considered. The almost total impossibility that merchandize could be packed by persons in a condition calculated to throw off contagious emanations, seems utterly neglected. The practical inference deducible from the fact that the crew of a merchant ship remains free from disease for a period exceeding ten days, appears an element in the calculations of Quarantine law-givers wholly and most unaccountably left out of consideration.

We earnestly hope that the British Government will be induced to take some efficient steps towards the reform of the Quarantine regulations now in force throughout the Mediterranean. That the period of sanatory surveillance might be lessened in all cases, with perfect safety, we entertain not the smallest doubt. That the period should be the same in steam and sailing vessels appears a wanton trifling with valuable time.

No isolated measures for the reform of Quarantine laws, however, can be of any avail. To be effective, the subject must be taken up as a measure of international policy, and carried out with entire acquiescence on the part of all the chief Mediterranean powers. The British Government, however, might well initiate the proceeding, and congresses have been held on matters of less pressing necessity. We conclude, therefore, by heartily commending to Sir Robert Peel, when he has carried through his present scheme of commercial reform, the great question of Qua-

quarantine reform. We can confidently anticipate for him an abundant popularity from success in such an enterprise. A Gadibususque—from Gibraltar to Odessa, one universal cry of joy and gladness will arise, when Quarantine regulations are revised, useless restrictions abolished, and when the unhappy prisoner in the Lazaretto can console himself with the reflection, that reason and science have limited his duration to the shortest possible period compatible with national security.

#### DEATH OF SIR CHARLES BELL.

WE greatly regret to have to record the death of Sir Charles Bell, which took place suddenly on the morning of the 29th ult. at Hallow Park, near Worcester, the residence of Mrs. Holland, whom the deceased and Lady Bell were visiting on their way to Malvern.

Sir Charles had been subject to pains about the chest of a spasmodic nature, and latterly assuming the characters of angina pectoris. He had been very unwell at Manchester a short time before, and had suffered much from pains in the stomach during his visits at Hallow; but appeared quite as well as usual on the 28th, and had been out for a considerable time during the day. At night the pains again became severe, but no danger was apprehended until 8 o'clock on the morning of the 29th, when he became rather suddenly very quiet, and Lady Bell, greatly alarmed, sent for Dr. Carden, of Worcester, who, on his arrival, found him quite dead, with the appearance of life having been for some time extinct.

Sir Charles was 67 years of age, and, with the exception of the complaint which proved fatal, retained considerable vigour and activity. He was out sketching on the 28th, being particularly pleased with the village church, and some fine trees which are beside it; observing, that he should like to repose there when he was gone. On Monday last, being just four days after this sentiment had been expressed, his mortal remains were accordingly deposited beside the rustic graves which had attracted his notice, and so recently occupied his pencil.

[As the Number was passing the press, we received the following letter.]

*To the Editor of the Medical Gazette.*

SIR,

THROUGH the medium of a London paper I have this moment become acquainted with the great loss the medical profession has experienced by the unexpected death of Sir Charles Bell.

The pupils who have received his instructions knew him as a valuable teacher, the results of whose experience and extensive professional knowledge were eloquently and unreservedly communicated, in his lectures, for their instruction and guidance: few, as a friend, more warmly urged them to perseverance, and an honourable and liberal spirit, in the practice of their profession. With these feelings I propose that all who have been pupils of the late Sir Charles Bell should unite in erecting to his memory a monument, which might serve as a memorial of his professional and scientific learning, and a mark of gratitude for the excellent instruction they have received from him.—I remain, sir,

Your obedient servant,

E. M. R.

Gloucester, May 3d, 1842.

#### MEETING AT THE COLLEGE OF SURGEONS.

A meeting was held at the College of Surgeons on Wednesday, and was very fully attended: we should imagine that not less than 700 of the members were present, besides a great crowd of visitors. The chief circumstance of the evening was the lecture by Professor Owen upon the skeletons of the fossil animals, mylodon and glyptodon, recently added to the museum. He commenced by explaining the general principles on which John Hunter and Cuvier had applied the knowledge of comparative anatomy to the interpretation of the relations not only of existing, but of extinct species. Cuvier especially, working as he did in the most productive field of fossil remains presented in any of Europe, had illustrated this principle, which he termed that of the co-relation of the different organs of the same animal body to the general purposes of



its existence. The professor explained by several examples in which the examination of but a small portion of the skeleton had sufficed for the construction in anticipation of the whole body, and then proceeded to explain the history of the discovery of the megatherium. President Jefferson, by whom the remains were first particularly described, judging by the size and form of the ungual phalanx, had conceived them to belong to some huge species of lion; but Cuvier, to whom some casts of the bones were sent, felt convinced, by the form of the articulation of the phalanx with the next bone, which was not on the superior but on the anterior inferior part of the latter, that it must have belonged to a species in which the claw was employed for some more general and constant purpose than that of the mere seizing of the prey, for which it serves in the lion. He concluded, therefore, that it belonged to some species related to the sloths. This conclusion was at length confirmed in the drawings which Cuvier received of a nearly complete skeleton of the animal presented in the museum at Madrid: but still it was doubted whether the whole of that skeleton was formed of the bones of one animal, or whether the seemingly disproportionate head and pelvis were not derived from two distinct species. This doubt, however, was completely removed by the discovery of a certainly perfect skeleton of the new subgenus of megatheroid animals, the mylodon, of which he then demonstrated the most striking characters, pointing it out as an animal whose habit it must have been to feed on the leaves and soft parts of trees, by raising itself on its great hinder extremities, and pulling down the branches of trees with its strong forearm and its tongue. The latter organ might be believed to be at least four times as large as that of the giraffe, judging by the size of the apertures for the lingual and hypoglossal nerves. There was also a peculiar character in the arrangement of the phalanges of the anterior extremity; the internal being furnished with claws, while the two outer were of such a form as to render it certain that the animal must in progression have rested on their exterior surface; so as to combine in its one foot the ungulate and unguiculate characters upon which Linnæus had

based his division of two chief classes of mammalia. The glyptodon had, in relation to the megatherium, the great interest of proving to what animal the large portions of osseous carapace which had so often been found near the remains of the megatherium, belonged. They had been supposed, even by Cuvier, to belong to the megatherium itself; and he supposed it, in this respect, to resemble the armadillos. But portions of a foot, and of a lower jaw, brought from South America by Mr. Darwin, had rendered it certain that some gigantic species of the armadillo tribe existed in the neighbourhood of the megatheria; and this had at length been proved by the discovery of the glyptodon, of which the College had purchased the carapace; the bones of the greater part of the skeleton having been so injured in the exhumation that they could not be transferred to this country. The Professor concluded by offering some striking observations on the characters of the fossils found in England, and on the peculiarities of the soil and climate which they proved to have been natural to this country in the periods previous to the existence of man.

After the lecture the company adjourned to the Council Room, where tea and coffee were provided, and to the museum, which was brilliantly lighted for the occasion\*.

## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

April 26, 1842.

DR. MERRIMAN IN THE CHAIR.

### *A Case of Dislocation of the Knee, with Observations.* By HOLMES COOTE, M.R.C.S.

THE object of the author in the relation of the case here presented, and in the observations which follow it, is to insist upon the practical inference, that in dislocation of the tibia forwards (or of the femur backwards) the injury to the ligaments, and other soft parts about the knee-joint, is not necessarily such as to render the recovery of the limb in a perfectly useful state a forlorn hope, as it has been represented by writers of high authority, some of whom have almost regarded

\* We presume that it was the announcement of this meeting which led to the idea (which proves to be erroneous) that conversazioni were to be given in Lincoln's Inn Fields like those formerly held at Pall Mall.

amputation as *prima facie* necessary to save the life of the patient.

Boyer, among others, observes that "complete dislocations are rare, because the surface of the condyles of the femur is of so great extent, that, necessarily, ligaments, tendons, and all other soft parts, would be enormously torn; a circumstance that could not happen, unless the power producing the accident acted with extreme force," &c. Delpech speaks of these accidents in the same tone, as very serious, in the degree of laceration which must attend them, but is disposed to recommend caution in adopting the conclusion of some other writers, that amputation of the limb is necessary.

In the case related by the author, the reduction was easily effected, and the injury of the soft parts must have been slight, as the patient was on his legs, and able to run, in sixteen days. He enters at some length into the anatomical examination of the ligaments of the joint, for the purpose of showing that dislocation may take place without any material laceration of them. Some interesting remarks follow on the time required for the re-union of lacerated tendons and ligaments, partly founded on observations of the progress of cases in which the former have been divided on account of distortions; and the paper concludes with some considerations on the treatment applicable to distortions of the knee.

*A Case of Fungus Hæmatodes.* By S. W. J. MERRIMAN, M.D. Physician to the Westminster General Dispensary, Gerrard Street, Soho.

A delicate boy, seven years old, suffered for some months from debility, and anomalous rheumatic pains. Two very painful tumors were then observed, one arising from the occiput, the other from the forehead: constant pressure on these tumors tended to diminish the pains: the tumors grew rapidly in size, spreading in various directions, by which the left eye was nearly thrust out of the socket; œdema supervened in the lower extremities, and death ensued in about ten weeks from the appearance of the tumors. The post-mortem examination showed these to be of a medullary nature: arising from the diploë, the internal table of the skull was scarcely at all affected, but the external was thickened, and covered, wherever the tumors had spread, with bony spiculae shooting up into the morbid growth. Some of the ribs were also affected with the same disease, and many axillary, lumbar, and inguinal glands were converted into a similar bloody brain-like substance, but, generally speaking, the viscera were healthy. In conclusion, the author notices the boy's mother, who has nearly lost the use of her wrist and

knee-joints by a species of chronic rheumatism, acting in a peculiar manner, and producing no distortion.

*A Case of Congenital Cataract, where sight was acquired by couching at the age of twenty-three years.* By R. A. STAFFORD, Surgeon to the St. Marylebone Infirmary.

The disease in the case here related was of the capsulo-lenticular variety, and the operation was performed by depression, the lens and capsule being carried downwards and backwards into the vitreous humour out of the field of vision. The patient's recovery proceeded very satisfactorily, and in the course of it phenomena were exhibited differing in some material respects from those described as having occurred in the cases narrated by Mr. Cheselden and Mr. Ware, in the Transactions of the Royal Society.

Among these phenomena, all of which are minutely detailed by the author, the most remarkable was the power gained by the patient, a very short time after the operation, of accurately estimating distance. The author believes that his patient was more advanced in age at the time of the operation than any other upon whom the operation for congenital cataract had previously been performed with success. Mr. Cheselden's patient was 13, and Mr. Ware's only 7.

## CIRCULATION IN THE BRAIN\*.

*To the Editor of the Medical Gazette.*

SIR,

MR. BELL denies that the brain feels the pressure of the atmosphere directly or indirectly. It will not be difficult to prove to the satisfaction of Mr. Bell that the brain *does* feel this pressure, and that he might have been spared his anxiety to stop the progress of an erroneous doctrine.

If the skull were a *complete* case of bone, without the least perforation for the transmission of blood-vessels or nerves, then, indeed, it might be truly said that the brain is exempt from the pressure of the atmosphere; but let there be the smallest foramen transmitting the smallest capillary to the brain, then most assuredly the minute thread of blood to which it affords a passage will as certainly convey the pressure of the atmosphere to the whole mass of the brain, as the water in the small cylinder of an hydraulic press conveys the power acting upon the piston to every part of the reservoir.

But there is more than a capillary vessel:

\* In my last communication, p. 110, column 2, line 15, for "Mr. Bush" read "Mr. Rush;" line 22, for "form" read "force;" lines 34 and 35, for "whenever" read "wherever."

there are large arteries and veins which form a communication between the interior and exterior of the cranium : upon these the atmosphere undeniably presses *before* they reach the brain : it will be easy to show that they feel the full force of this pressure *after*. Confined fluids transmit pressure to any amount to any distance ; the columns of blood therefore which receive the atmospheric pressure without the skull convey it to the minutest ramifications of the vessels within ; and more, the coats of these vessels being elastic, transmit this pressure to the substance of the brain, which again transmits it to the inner surface of the cranium, which being unyielding will not transmit it any further.

The skull, its contents, and connected vessels, are in the position of a long-necked globular vessel, filled with water, and any substance of the consistence of brain, and turned upside down ; the narrow neck corresponding to a blood-vessel, and the globular part to the skull and brain. The operation of atmospheric pressure can no more be denied in one case than in the other.

Mr. Bell's error seems to arise from an impression that atmospheric pressure on the brain implies direct pressure upon its surface, acting from the periphery towards the mass ; whereas the brain is so circumstanced that the direction of the pressure is from the outlets of the skull, giving passage to the blood-vessels and nerves towards every part of the surface of the brain in contact with the dura mater.

Dr. Kellie's experiments prove that blood-letting does not diminish the quantity of blood in the brain under ordinary circumstances ; but they do not prove that this organ is free from the influence of atmospheric pressure : indeed, it is this influence acting upon the vessels entering the cranium which prevents the diminution of blood within it : abstract this influence, by placing a decapitated head *in vacuo* in a favourable position, and the gravitating tendency of the brain and of its blood will come into operation ; the brain will sink, and the fluid escape : overcome it by a shock, in the way described in my first communication, we have the same result ; counteract this influence in one direction by establishing it in another, that is, by removing a portion of the skull by trepan, again we have the same result ; provided, at the same time, we diminish the tension of the vessels and the form of the heart by blood-letting. It is impossible to diminish the quantity of blood in the brain by blood-letting alone, as long as vessels entering it receive the unimpeded influence of atmospheric pressure. It thus appears that Mr. Bell and I draw opposite conclusions from Dr. Kellie's

experiments. Would it have been "preposterous" in Mr. Bell to have forsaken assertion, and pointed out *how* the experiments alluded to prove that the effect of atmospheric pressure is not felt within the cranium ?

Your correspondent allows that the removal of a portion of the skull admits the pressure of the atmosphere upon the brain. What difference is there, as far as this pressure is concerned, between the artificial removal of a portion of the bone and the natural absence of it for the passage of vessels and nerves ?

The experiment of removing a portion of the skull in order to diminish the quantity of blood in the brain, is just the same as making an opening at one end of an egg to enable us to extract the contents from an opening at the other end. The two cases are analogous ; the atmospheric pressure acting upon the vessels entering the cranium, maintains a steady quantity of blood within it, in the same manner as this pressure retains the contents of an egg *in situ* when an opening is made at one end only. The egg may be laboriously sucked, but little or no progress will be made in emptying it, unless a counter-opening is made at the other end to establish the equilibrium of atmospheric pressure : this is a fact familiar, in these later times, to every grandchild.

I do not see how I have *made* Dr. Holland's statement support my views, except by legitimate inference. That author states a fact, viz. that aeronauts do not suffer from vertigo, while it is well known that mountain pedestrians do, when they have reached a high elevation. To ascertain the reason of this, we must inquire into the different circumstances attending each case. We find that the pedestrian is liable to bodily fatigue, and to shocks arising from the acts of walking or leaping ; while the aeronaut is exempt from both. We may infer, therefore, that the cerebral symptoms are connected either with bodily fatigue or with shocks. Dr. Holland adopts the former inference ; my views lead me to adopt the latter. My suggesting the substitution of the word "shocks" for "bodily fatigue" clearly indicated that *my* opinion would be expressed, and not Dr. Holland's. In short, this author supplied a fact from which I drew an inference. In what consists the "novelty" of the above mode of reasoning I am at a loss to discover.

When Mr. Bell says that his note was penned in the spirit of kindness, I give him full credit ; it was my own impression when I read it, and I expressed as much to my friends. I hope I have displayed no marks of asperity or acrimony in my last or present communication ; for I am sure I have felt none. Truth is my only object, and I can-

not find fault with the best means of attaining it—discussion.—I am, sir,

Your obedient servant,  
THOMAS HAWORTH.

Bolton, May 2d, 1842.

### ARRESTING OF HÆMORRHAGE.

*To the Editor of the Medical Gazette.*

SIR,

HAVING read in the LONDON MEDICAL GAZETTE of the 1st of April, a case of serious and alarming hæmorrhage after the extraction of a tooth, which occurred in the practice of Mr. Davenport, of Eltham, Kent, and having experienced the feelings of anxiety attending such an alarming event, in several similar cases—one of which you were kind enough to insert in your journal, that terminated fatally—and as Mr. Davenport requests to be informed of any remedy that may have succeeded in such a case, I take the liberty of requesting your inserting one that a gentleman, a surgeon, kindly sent to me, after having read the case I allude to in the LONDON MEDICAL GAZETTE, and which he found effectual after he had tried every thing that could be thought of. He says, "upon the spur of the moment I filled the bleeding cavity with 'plaster of Paris,' which effectually checked the hæmorrhage in a very short time." When it is considered how rapidly plaster of Paris absorbs moisture, "it must soon become coated with the coagulating principle of the blood, which is left in a manner dry upon the plaster," and from the plastical nature of plaster of Paris when moistened, it may be so completely pressed into every little depression of the alveolus, and consolidating there, be the most perfect plug that could be applied, being held down for a few seconds by the finger until hardened. Should you think this, I really think, valuable hint worthy of a place in your Gazette, it will be an additional favour conferred upon

Your obedient servant,  
W. A. ROBERTS.  
Surgeon and Dentist.

11, Duke Street, Edinburgh, April 22, 1842.

*To the Editor of the Medical Gazette.*

SIR,

CASES of alarming hæmorrhage after the extraction of teeth having been recently published in your Gazette, and the *London and Edinburgh Medical Journal*, and as one of your correspondents, Mr. Davenport, wishes to be informed of some remedy that will suppress similar bleedings, I am in-

duced to inform him, through your valuable pages, that the most certain and easy remedy I have ever found succeed in several cases which have come under my notice, has been to replace the tooth (whether single-rooted, bicuspid, or having three or more fangs) which, in a few days, becomes firm and often serviceable. The superiority of this practice over every other is evident from the impossibility of fitting any substance to the cavity so accurately as the tooth which had been previously extracted, and which, unlike cork, sponge, lint, &c. need not be removed. Mr. Davenport was surprised to find the hæmorrhage persistent, although the "cavity was filled with a coagulum nearly as hard as liver." About three years since I saw a young man of hæmorrhagic idiosyncrasy, who had accidentally scratched his tongue, and bleeding, to a most alarming extent, supervened. When I first saw him, his tongue was thickly covered with a large, firm, dark, and foetid coagulum, the smallest puncture of which became a fresh bleeding point. The hæmorrhage was finally stopped with Lycoperdon and Tinct. Benz. Co.

I am, sir,  
Your obedient servant,  
JOHN MOYLE.

Chacewater, Cornwall,  
May 2d, 1842.

### ATTENDANCE ON THE POOR.

*To the Editor of the Medical Gazette.*

SIR,

ON reading the Schedule issued by the Poor-Law Commissioners, and published in your last number, respecting the qualifications of medical officers, Art. 3, whilst I cannot but highly approve of the double qualification therein required, yet, unless I mistake the existing law very much, I am persuaded they have no power to enforce such regulations without a new legislative enactment, because, according to the 4th and 5th Will. IV., cap. 76, "every person duly licensed to practise as a medical man" is eligible to the appointment of Union Medical Officer. But the present regulation goes to repeal this part of the Act, and to introduce a qualification which the law does not recognize—a degree in medicine from an English university, or from the Royal College of Physicians in London, and a diploma from the Royal College of Surgeons. Now I would contend that such a qualification does not come within the meaning of the Act; a physician or surgeon not being, in the eye of the law, "a person duly licensed to practise as a medical man:" indeed, I believe it has been decided in several cases that neither

the surgeon or physician can act as an apothecary, unless he also possesses the requisite license.

Should I be wrong in my views on the subject, I shall be greatly obliged by some of the readers of your valuable periodical setting me right.—I am, sir,

Your obedient servant,  
M. D.

April 30, 1842.

## ROYAL COLLEGE OF SURGEONS IN LONDON.

*To the Editor of the Medical Gazette.*

SIR,

I AM desired by the President to request you will give a place in your journal to the following notice, which may be interesting to many members of the profession.—I am, sir,

Your obedient servant,  
EDMUND BELFOUR, Sec.

April 23, 1842.

THE catalogue of the specimens of urinary calculi in the museum of the College, about 600 in number, illustrated by twelve engravings, plain or coloured as may be desired, is now in the press, and will be delivered to members of the College at the cost of the paper and letter-press only; no charge being made for the plates unless coloured.

Members desirous of possessing a copy are requested to send their names to the secretary, at the College, on or before the 10th of May next, in order that the number of copies necessary to be printed off may be in some measure ascertained.

The first volume of the Transactions of the College will shortly be published, and will be sold at cost price to such members as shall transmit their names to the secretary on or before the 10th of May next.

[We readily comply with the request of inserting these notices, which, however, had already appeared on the wrapper.—E. G.]

## STUDY OF MENTAL DISEASES.

IN order to place the question at issue in a proper light, it appears useful previously to examine into the actual state of medical education generally pursued in this country, especially respecting the study of mental diseases; because, if the means for acquiring information, on such an important malady as insanity, be as defective as I believe them to be actually, the necessity for some alteration, in the present system, becomes consequently more imperative. Undoubtedly, throughout the whole range of medical science, it must be acknowledged

that nothing can well be more limited than the means of obtaining practical knowledge, which the medical profession at present possess, in this department of study; notwithstanding its obvious importance to the community. Since not only are the opportunities for investigating mental diseases of a very partial description, but the subject of insanity does not even form an essential part of the stipulated courses of lectures, required by the various licensing medical corporations from the candidates for their diplomas. Indeed, excepting by the teachers of medical jurisprudence, mental diseases are seldom alluded to, much less properly investigated; and even when the subject of insanity is actually noticed in these lectures the inquiry is only of a secondary or legal description, and neither embraces sufficiently the pathology of this extensive class of diseases, nor the curative treatment which the physician ought to pursue. In fact, the investigation of diseases of the mind, their nature, and the remedies best adapted for their cure, if not wholly neglected, are very partially investigated, by the general medical student. And this serious defect in medical education will continue to prevail, until the different medical colleges require from the aspirants for their much coveted honours, not only previous attendance upon lectures on insanity, but also clinical instruction at an hospital where lunatic patients are admitted; whose doors ought therefore to be freely opened, under proper regulations, to those students who may be anxious to obtain information. In consequence of the difficulties at present impeding the diffusion of knowledge on this important subject, and as it does not constitute an essential part of medical education, the study of mental diseases at the present day is too much neglected, excepting by a very limited number of medical practitioners who confine themselves to that department of their profession, and therefore do not usually practise in any other class of diseases. This division of labour, as it may be called, is found to be advantageous in the metropolis, and in large towns; but any restriction regarding the knowledge of insanity is by no means useful to the public generally, and acts injuriously on the great majority of medical practitioners in the country, who should be as well versed in the treatment of mental diseases as in those of the chest, or of any other part of the human frame. Many are undoubtedly quite competent for the treatment of mania; but my wish is, to make that knowledge universal in the profession. But although impressed with the importance of the subject, should any pupil, during the usual period of his preparatory studies, wish to obtain experience and information on insanity, the path to knowledge is so beset with difficulties, that



notwithstanding all the zeal he might otherwise have, the student would find it almost impossible to attain his object, unless through personal favour, or at a very great expense; neither of which alternatives are desirable means for acquiring knowledge, in a liberal profession.

Considering doubt can reasonably exist regarding the advantages which would ensue to medical men, and to society at large, by improving the present defective state of medical education, in relation to insanity, the only question therefore now requiring investigation is the best way for effecting the requisite alterations. On this head, the same method which is pursued in the study of other branches of medical science apply with equal force to this particular class of diseases; namely, the student must acquire practical knowledge and experience in mania through the medium of lectures; and also learn properly to apply the doctrines he has been taught, by attendance at the bedside of patients affected with mental diseases; as, in that way, the future practitioner can alone properly qualify himself for the arduous duties he must afterwards undertake. To attempt effecting that object, by any other mode, would only lead to disappointment, tend to perpetuate ignorance, and prevent real improvement. Reading will, no doubt, considerably assist the student in investigating affections of the mind; but that method of study will not be sufficient, for without actual observation of this disease, when variously affecting the human constitution, any knowledge otherwise obtained is neither so available in practice, nor will prove so useful to the patient, as experience acquired from personal attendance upon insane patients; especially when that mode of study is pursued under the guidance of experienced teachers, and those accustomed to instruct their junior brethren, in the wards of an hospital. From these remarks it follows, that the most useful method to adopt, for improving the knowledge of medical men in mental diseases, would be, in the first place, to open the doors of our great public hospitals for the reception of the insane, as, for instances St Luke's, Hanwell, and Bethlem, to medical students under proper regulations, should they feel desirous of investigating insanity in the extensive fields for study which these institutions contain. It would likewise prove of much use, if the medical corporations, prior to granting their diploma, were to exact attendance at such hospitals for a limited period, and also attendance at lectures on the nature, pathology, and curative treatment proper for that class of maladies. However, if this recommendation should be adopted, the expense entailed upon the medical student ought not to be

considerable, lest the object proposed might thereby be materially interfered with, or even perhaps defeated.

Bethlem Hospital, from being pre-eminent for its excellent arrangements, and having extensive wards, containing generally from 310 to 340 patients, is an institution admirably adapted for the purpose of obtaining instruction; and being principally intended for the reception of insane patients, who are considered of a curable description, although not exclusively so, since there are likewise incurables and criminal lunatics; that hospital, therefore, possesses many advantages for the purposes of study, over other establishments, in which every description of patients, whether curable or otherwise, are received. The attendance of medical students, in the wards of such an extensive hospital as Bethlem, where a great variety of insane patients are constantly under treatment, and from five to six new patients are admitted every week, would therefore be most useful; particularly if compared with other lunatic asylums, containing paralytic, epileptic and incurable lunatics or idiots, almost indiscriminately. Of course cases of that melancholy description are by no means unimportant to the medical student, and ought likewise to be investigated by the diligent inquirer, in order to alleviate if possible their sufferings, however hopeless any prospect of their cure may appear. But as the majority of medical practitioners are more likely, in the course of their professional practice, to be called upon to treat the less severe, and curable varieties of insanity, than cases of a chronic description, knowledge of the ordinary forms of recent diseases, is, therefore, most important: and considering it will be admitted that few institutions are better adapted for studying mania in every variety than Bethlem Hospital, such reasoning applies with peculiar force to that institution. Besides these advantages, it ought to be recollected, that the medical officers of the establishment, being men of great experience and acquirements in their particular departments, and as there is a resident apothecary in constant attendance upon the patients, as also a matron, who, to great kindness of manner and firmness of character, possesses other qualities eminently adapted for the superintendant of female lunatics, with functionaries for each department,—nothing is really wanting at Bethlem Hospital to make the establishment in every way useful to the public, but a more free admission of medical students to the wards of the hospital, whereby the ultimate benefits accruing to society, may be extensively disseminated.

Objections may, perhaps, be taken by the governors, lest the excitement and noise

occasioned by the attendance of pupils in the wards of Bethlem, unlike any other lunatic asylum, might produce injurious effects upon the patients, especially upon the females.

Undoubtedly indiscriminate admission, or permitting crowds of visitors at irregular hours, would not be judicious; and, even in some instances, might be attended by injurious consequences to individual patients, when affected by mental alienation; but in the great majority of cases, no serious injury could arise from the physicians being accompanied, during their professional visits, by a few medical pupils; indeed, the danger appears to my mind to be very slight, if not imaginary\*.

### ULCER OF THE STOMACH.

#### CORONARY ARTERY OPENED.

MR. SMITH laid before the Society an example of ulceration of the stomach, taken from the body of a man, set. 79, who had been for many years before his death subject to biliary derangement, and symptoms of aggravated dyspepsia: three weeks before his death he was attacked by severe vomiting, and considerable quantities of blood were ejected from the stomach; he could not retain in the stomach either solids or fluids; the deglutition of fluids, in particular, was followed by severe vomiting; the alvine discharges were also mixed with blood; he also suffered from an enlargement of the prostate gland.

*Autopsia.*—A circular ulcer, about the size of a shilling, was found near the pyloric end of the lesser curvature of the stomach; the ulcerative process had opened the coronary artery; the surface of the ulcer was foul, and of a green colour, and the stomach very vascular; the middle lobe of the prostate gland was greatly enlarged, and formed an irregular tumor, projecting into the bladder; the bladder itself was distended, so as to be capable of containing nearly three quarts of fluid; its parietes were remarkably thin, but the muscular fibres unusually distinct, giving the interior of the organ a reticulated appearance; between these packets of muscular fibres the walls of the bladder were diaphanous; the mucous membrane presented the anatomical characters of chronic cystitis.—*Dublin Journal of Medical Science.*

\* Extracted from a pamphlet entitled "Observations on the admission of medical pupils to the wards of Bethlem Hospital, for the purpose of studying mental diseases. By John Webster, M.D. &c. one of the Governors."

### ROYAL COLLEGE OF SURGEONS.

#### LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, April 22, 1842.

J. Campling.—J. P. Kelly.—J. Lambe.—H. Kyd.—G. G. S. Coward.—R. A. Lafargue.—J. L. Beresford.—H. Harris.—R. G. Vivian.—J. T. Glover.—T. Morris.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, April 23, 1842.

Small Pox .....	3
Measles .....	24
Scarlatina .....	5
Whooping Cough .....	39
Croup .....	6
Thrush .....	2
Diarrhoea .....	3
Dysentery .....	1
Cholera .....	0
Influenza .....	2
Typhus .....	18
Erysipelas .....	2
Syphilis .....	2
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	167
Diseases of the Lungs, and other Organs of Respiration .....	262
Diseases of the Heart and Blood-vessels ....	17
Diseases of the Stomach, Liver, and other Organs of Digestion .....	60
Diseases of the Kidneys, &c. ....	10
Childbed .....	4
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	3
Rheumatism .....	0
Diseases of Joints, &c. ....	2
Ulcer .....	1
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	86
Old Age or Natural Decay .....	68
Deaths by Violence, Privation, or Intemperance .....	19
Causes not specified .....	4
Deaths from all Causes .....	809

### METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

April	THERMOMETER.		BAROMETER.	
Wednesday 27	from 36 to 59		29.97	Stat.
Thursday . 28	33 63		29.99 to 30.07	
Friday . . . 29	35 64		30.04	29.96
Saturday . 30	41 65		29.86	Stat.
May				
Sunday . . 1	41 67		29.95	30.02
Monday . . 2	42 68		30.05	30.04
Tuesday . 3	29 63		29.97	29.89

Wind E. and N.E. on the 27th; N.E. and S.E. on the 28th, 29th, and 30th ult. N.E. on the 1st and 2d; and N.W. and W. by S. on the 3d inst.

From the morning of the 27th ult. to the afternoon of the 3d inst. clear. During the afternoon of the 3d, about two-hundredths of an inch of rain fell.

CHARLES HENRY ADAMS.

WILSON & OSILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

**Medicine and the Collateral Sciences.**

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FRIDAY, MAY 13, 1842.

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INTRODUCTORY LECTURE  
TO THE  
COURSE ON MIDWIFERY.

*Delivered at London University College,  
May 3, 1842,*

BY DR. EDW. W. MURPHY,  
Professor of Midwifery.

IN commencing a course of lectures, it has become a general, I might almost say an universal, practice to preface them with some observations introductory to the subject about to be taught; and whether it be its history, its improvement, or the means of studying it with most advantage, the teacher will endeavour to bring forward such matter as may appear to him best calculated to encourage the student, and to smooth the difficulties of his pursuit.

In compliance, then, with custom, if I had no better motive, I should devote the present lecture to such a purpose; but when I reflect upon the honour that has fallen upon me in being entrusted with the obstetric education of the pupils of this College, and, a stranger to you, find myself called upon at once to enter upon those duties which I have volunteered to undertake, it becomes imperative upon me to give you some general outline of my views as to the nature of the subject you are about to study, as well as the method in which you might pursue it with most advantage to yourselves. Had I not this very powerful reason, I confess that the subject itself would supply me with a very strong argument against being silent upon its interests, because I believe that I am not incorrect in saying that of all medical sciences which have been objects of scientific research or of practical inquiry, none has met with a more chilling indifference, none has been treated with more unmerited contempt, than midwifery. Until very lately, expelled from your medical Colleges—at least, I believe, made a disqualifi-

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cation for their honours, and for a long time looked upon as a pursuit unworthy the energetic intellect of man—it had been suffered to sink in the obscurity of an anile occupation, receiving scarcely a higher estimation than the spindle and the distaff. If this had been a justifiable prejudice—if the profession you are about to enter had been deservedly placed in a lower rank—if it had not suffered rather from its misfortunes than its faults—considered contemptible because practised by those who could not command respect—unintellectual and unscientific because it numbered, even amongst its successful followers, those who gave little proof of intellect and less of science—if midwifery had not been despised because it was misunderstood—I should not think it necessary to occupy your time with feeble efforts to magnify my subject; but when I feel convinced that a cloud of unsubstantial prejudices have obscured its real nature, it is my duty, and shall be my object, to prove to you that, whether as a subject of scientific investigation or of practical pursuit, whether as containing valuable facts to assist and encourage the researches of the physiologist, or as embracing points of practice which require all the discernment and decision of the accomplished physician, midwifery holds a place in no way inferior to those branches of our profession which have been looked upon with more favour, and have received a larger share of professional patronage.

Two circumstances have contributed more than any other to depreciate the study of midwifery. One is, the facility with which it may be practised. It being, in the great majority of instances, the observation of a natural process, in which we have only the negative duty of avoiding interference unless some unexpected interruption may take place, there are few occasions in which the knowledge and experience of the practitioner is put to the test: having, therefore, this security from

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exposure, it is not surprising that the ignorant, who were never remarkable for diffidence, should gladly adopt it, and profit by a practice which they could not improve. But, gentlemen, let not this deceive you; in the practice of midwifery there is one fact which cannot be too strongly impressed upon your minds, and which should teach you caution, lest those apparent facilities should beget an indolence of which you might one day repent. It is quite true that, in general, you will not have difficulties to contend with; but those cases in which they do occur, or where danger presents itself, generally give little time for consideration: if your minds are not prepared with the requisite information, and your judgments matured by patient observation, so as to act on the instant with promptitude and decision; you are given no time to seek for information, you will become embarrassed, and incapable of undertaking the principal duty you were called upon to perform. In failing to secure the safety of your patient, need I tell you the painful situation, the unenviable feelings, of the practitioner who, through his ignorance, has snapped asunder the dearest tie of society—who has converted a house of joy and anticipated congratulation, where, perhaps, a happy result was confidently promised, into a house of mourning, in which a desolate husband and an orphan family have to pay the penalty of his presumption and neglect.

Another disadvantage under which, it appears to me, that midwifery is placed, is the want of a distinct obstetric board or centre of education. If it should be that your friend is afflicted with fever, that a sister is threatened with consumption, or that any of those who are dear to you is attacked with some one of "the thousand ills that flesh is heir to;" you have a College devoted to the education of the physician; one which requires from him not alone a knowledge of internal diseases and their treatment, but such testimony of a liberal education as will insure the capability of improving the profession he has studied, and of bringing to the observation of such maladies a previously-cultivated and enlightened understanding. If you become the subjects of some one of the various and sometimes most serious accidents that are of daily occurrence, or are liable to any of those external and often disgusting diseases that render life miserable, you have also a College to superintend the instruction of the surgeon, and to secure to you a well-educated practitioner. These Colleges are proofs that such matters are considered of too serious an importance to the public welfare to entrust to every casual or ignorant pretender. But if the question be the safety of a wife in her hour of trial, the health of her infant, or the relief of those diseases which depend

upon the derangement of a natural function, not a few of which are the result of ignorant mismanagement—if it be the determining any of those important medico-legal questions upon which so many vital consequences hang, as the existence of pregnancy, its duration, &c. &c., the fact of infanticide—you have no board exclusively devoted to superintend the education of practitioners in this important branch of professional knowledge. The student in midwifery may be a physician or a surgeon, may be a midwife or a quack; any thing, in fact, but an obstetrician.

Is it surprising, therefore, that midwifery has been held in humble estimation, and that any character it has been able to acquire is alone attributable to the talent, industry, and zeal of some of those ornaments of our profession whom accident has led to the study of it? I do not mean to inquire into the causes which have led to this, nor to depreciate the exertions of those medical bodies who have, with laudable industry, endeavoured, as far as in them lay, to remedy the evil; it is sufficient to know that while other branches of medical science have a head and independent existence, midwifery has none, and depends alone for its security upon the strength and flourishing condition of that body round which it can most intimately entwine itself; and therefore this fact may be justly assigned as one of the causes why its importance has not been appreciated as its merits. I trust the time will not be far distant when the efforts which are now being made in the different centres of medical education in its favour, will be crowned with success: and as they have made it imperative on the student to attend courses of lectures on the subject, and to give proofs of a certain amount of practical experience, so they will hereafter give him the advantage of a diploma distinctly testifying to the knowledge he has acquired, which would be more satisfactory and honourable to him if it were the result of an examination conducted by a board composed of men distinguished as the especial cultivators of this branch of our profession.

I have stated to you, gentlemen, that, whether as a subject of physiological inquiry or of practical observation, midwifery is in no way inferior to the other branches of medical science. I shall endeavour to illustrate, and I trust shall satisfactorily prove, my assertion.

If I were to ask you what series of observations occupy, in the present day, the greatest attention, and give the deepest interest to physiology, I am sure you would point to embryology—to those microscopic researches which are directed to unveil the mysteries of our earliest existence: if so, then surely you will not deny to midwifery the honour of a branch of medical

science so peculiarly its own, or say that its study is unimportant to the accoucheur. It is this fallacy that has led to the most absurd mistakes, and has retarded, if not altogether prevented, another subject of inquiry of almost equal interest—the pathology of the ovum. When abortion takes place, the ovum may be blighted, the membranes diseased, and various morbid phenomena presented to the accoucheur, which he either passes by unnoticed, or mistakes for a healthy condition, simply because he knows little of the healthy ovum. Hence I have known an ovum, blighted in the second week, but retained in the uterus for six weeks or two months, presented as a specimen of the foetus two months old. I have known a simple clot of blood, retained for some time in the uterus, so that the serum, in place of escaping, was collected in the centre, and was surrounded by a strong cyst of fibrine, produced as an abortion, in which the foetus was absorbed. These absurdities could not arise with you who have been already educated so efficiently in this branch of obstetric knowledge. I only ask you to admit with me that it is important as a branch of your profession, and is a subject of intense interest to the physiological inquirer.

Permit me now to give you another illustration of the advantages which the well-educated obstetrician is to the physiologist, in being able to appreciate the value of facts which bear upon some of his most interesting investigations. It will be your province to aid in bringing into a new existence the perfectly-formed embryo; you have the best opportunity of witnessing any deviation from its ordinary appearances; under your notice must, therefore, fall those exceptions to its normal development to which we apply the term "monster," or "monstrosity." These strange conformations have always attracted attention; but, as their name implies, have been objects only of disgust or superstitious dread. Within the last few years, however, they have been brought within the limits of scientific research, and are found, when more closely examined, to present as attractive a subject of enquiry, and to illustrate questions of as high an interest, as any that may be met with in the study of nature.

The endless varieties of form, and the multiplied combinations of creative intelligence, have always been the theme, as they have been the admiration, of science: and it has been the proudest effort of philosophy to trace amid this maze of ever-varying results the simple mechanism which moves the whole. Still the most determined laws have had the most embarrassing exceptions; but it is remarkable that a stricter analysis has proved that these very exceptions, when more accurately examined, have become the strongest evidences in support of the law. What has already been determined in other

sciences, the physiologist has attempted to establish in the animal economy, and has sought to prove that these odd irregularities in shape, these repulsive blots upon our nature, are but so many proofs of the laws which regulate our organization.

He has endeavoured to show that these remarkable exceptions to our natural conformation but illustrate the uniformity of the general plan; and that the very extravagance of forms, which seem to indicate Nature in her wildest whim, only establish the unity of her design, and are so many illustrations to teach us the successive processes by which the perfection of our being is attained.

One of those laws may be stated to be, "that in the development of the embryo the growth of different parts is not simultaneous; that an order of succession is observed, by which structure follows upon structure, organ upon organ; and that what is true of an organ, or of the embryo as a whole, is equally true of the several parts of which the organ may consist." The perfection of art has given to us, in the microscope, an unexpected aid in revealing to us the certainty of this law: it has enabled us to perceive the almost ultimate element of our being, and to trace the formation of the several tissues and organs as they successively appear. But the same conclusion might be inferred from monsters: the elementary membranes, which form the intestine, the skin, and the spinal canal, are found in all monsters. In the cerebro-spinal system, those parts first formed, the spinal marrow, medulla oblongata, optic tubercles or corpora quadrigemina, are generally found, though the remainder be deficient. If, in this order of development, we may assume that some disturbing cause gives rise to an undue activity in the growth of a part which precedes, or if there be an arrest in that which is to follow, the necessary effect will be, that the organ earliest formed will impede, if not altogether prevent, the completion of that which is later; or the arrested organ will leave a vacuum for the former to fill up. For example, if we take the face, we find the eye to be one of the earliest organs formed: if the development of the nasal apparatus be arrested, which succeeds it, the eyes converge, coalesce, become apparently single, and thus are produced that singular class of monsters called "cyclops." Again, in the abdomen the intestines are earliest formed, even before the septum which is the boundary between the thoracic and abdominal cavities: hence the intestines are always found, though the diaphragm may be absent, or imperfectly formed; and sometimes, in the latter case, the intestines will occupy the thorax, and thus arrest the growth of the lung, which is later in its formation.



Other examples might be quoted to prove that certain monsters become only so many illustrations of the law of successive development. An attempt has been made to go even farther than is, but which has failed only because the facts are too limited to authorize so general a conclusion. It being established that the germ of the embryo did not contain within it all the parts and organs which afterwards were successively brought into view, but that, from the simplest formation, it gradually attained the most complex, and also it being found that, in the different stages of foetal growth, certain resemblances could be traced to the permanent type of the lower animals, it was a question sought to be proved whether the foetus did not pass through the perfect form of the different orders of the animal kingdom, beginning with the lowest, and so proceeded through each class until it attained the highest. Many strong analogies favoured this opinion: for instance, the simplest form of animal life is found to be a mere vesicle containing fluid, as in the hydatid (a cyst containing other cysts, of which it is the parent): such also is the first germ of our being; a microscopic parasite; a compound vesicle which, on its entrance into the uterus, is covered with villi that become equally a means of attachment and support: if the further progress of its development be arrested at this stage, the vesicle continues to increase until the uterus throws it off as imperfect, when it appears as an enlarged cyst, with scarcely a trace of the future foetus existing in it.

As the foetus advances in its growth, new analogies to the different orders of the animal kingdom present themselves, and those organs which it has in common with animals lower in the scale, always precede in their appearance, and attain perfection sooner than, those of the higher class. Thus the scarcely convoluted intestinal tube, single circulation, and ganglionic nervous system of the invertebrate animals, are first formed; while those organs for the more elaborate secretions—the double circulation, and the sensorial nervous centres—are later in attaining perfection. This may be illustrated from certain monsters: we know of none in which the intestinal canal is absent, but there are those that have only the simple intestine; there are none which do not possess a circulating system, but there are examples in which the heart is altogether absent; the ganglionic series may always be found, but the cerebro-spinal axis is sometimes wanting. The order of precedence is thus proved; because arrests of development always affect those parts latest in their completion.

If from the invertebrate you pass to the vertebrate animals, the same parallels will be found; and in the evolution of the system, which constitutes its leading character, in

the formation of the spinal marrow and brain, those parts common to the lower vertebrata precede and are perfected before those of the higher classes. Thus, as I have already stated to you, the spinal marrow, the medulla oblongata, and optic tubercles, precede the appearance of the cerebral lobes: arrests in the progress of development consequently produce the varieties of acephalous, podencephalous, and anencephalous monsters.

It is unnecessary for me to proceed farther with these illustrations. I have referred to them on the present occasion to prove to you the value to physiology of a sound obstetric education, and to show you that, in your future sphere of duties, many opportunities may present themselves of aiding these inquiries, which you may profit by or lose, precisely in proportion to your previous knowledge of the subject. I feel the less hesitation in claiming your attention to this part of your obstetric education, because, as pupils of this College, you are especially fortunate in having, as your Professor of Physiology, a gentleman pre-eminently distinguished for his intimate acquaintance with embryology. This part of your education you will therefore receive from him; and in my future courses I shall only allude to so much of it as may be necessary to illustrate questions of practice. In doing so I am acting in accordance with the wishes of this College; but were it otherwise, I should certainly wish that it should be so, and would feel some little reluctance to recapitulate imperfectly what you have already had so ably explained to you: I would feel that I scarcely had a right to do so.

*"Neque ego ausim, coronam detrahere cum multo laude merentem."*

If I have succeeded in showing you that midwifery opens a wide field of facts to the physiological inquirer, I shall direct your attention to another object of scientific research, and shall endeavour to satisfy you that parturition itself affords as beautiful an illustration of mechanical contrivance as any that have been offered in natural physics.

Man is the only animal that assumes the perfectly erect position, and the development of his brain is greater, in proportion to his size, than that of any animal of his class. These two facts, however advantageous to him on every other point, become to the human female a leading cause of difficulty in giving birth to her offspring. From the fact of the position being perfectly erect, the pelvis of necessity becomes a centre of motion, itself immovable, and acted upon by opposite forces. As it supports the weight of the body above, and like an arch presses down upon, and is resisted by, the femoral bones below, it is essential that its whole construction be remarkably firm and

compact. It is composed of three bones, united by one of the strongest articulations in the human body : the passage therefore of a body through the pelvis, that would entirely fill, or having any tendency to expand it, must be proportionably difficult.

Besides this, as the pelvis forms the lower boundary of the abdominal cavity, and upon it the free contents of the abdomen rest, it is essential that it be so constructed that these contents cannot fall through it in case of shocks ; and as it is not actually closed below, it should be as contracted in the outlet as circumstances will permit. Such is its construction. We find that portion above the brim sufficiently open, and forming, with the soft parts attached to it, a perfect basin, terminating the abdominal cavity ; but below the rim the pelvic cavity is first withdrawn from the line of direction of the abdomen ; and while the axis of the false pelvis is nearly vertical, that of the brim and cavity forms a considerable angle with the perpendicular. The contents of the pelvic cavity are thus removed from the effects of shock, the influence of concussion being thrown forwards upon the pubis ; hence the frequency of inguinal and femoral hernia in comparison with that of the pelvic viscera.

Not only is it thus withdrawn, but the cavity itself is partially closed : the ischial surfaces converge, and a resistance is at once offered to the passage of any large body through it. The child's head, therefore, is an obvious difficulty, and some mechanical advantages are required in order that its passage be at all accomplished. It is my wish to explain how nature effects this purpose.

In the most natural position the child's head is so placed that its least measurement is adapted to the widest of the brim ; to effect this the head of the child is pressed down upon its chest as it enters the pelvic cavity ; the occipito-parietal portion is consequently most dependent ; but if it continued to descend in this direction, the convergence of the ischia would at once present an impediment ; it is necessary, therefore, that it be changed to gain the widest space of the cavity. In consequence of the sacrum retreating, and forming a hollow below the brim, this space is in the antero-posterior direction ; a rotation must therefore be accomplished by which the head may be placed in that position. The construction of the pelvis is such as to compel the head to make this turn.

Although in the dry pelvis its transverse measurement is greatest, yet when covered by the soft parts the oblique is found to be so ; the head therefore passes the brim obliquely, and is at first arrested by the ischia, which present to it a smooth surface, so contrived as to form a double plane slightly inclined in opposite directions : the occipital

portion then descends upon the anterior plane towards the arch of the pubis : the frontal moves upon the posterior plane towards the hollow of the sacrum. The shape of the pelvis at this part is calculated to facilitate this movement. Anteriorly the obturator foramen affords more room than it had before, and when it arrives at the pillar of the pubic arch it is so bevelled as to facilitate its entrance into that space ; while posteriorly the sacro-sciatic foramen offers a similar advantage, and the short sacro-ischiatic ligament becomes also a species of inclined plane, upon which the forehead glides into the hollow of the sacrum.

When this rotation is effected the head will lie in the antero-posterior position, and a new motion of rotation commences still more remarkable. The head has now to overcome the narrow outlet, completely closed in by a very resisting perinæum. This is accomplished by making the head act as a lever ; the pubic arch becomes the fulcrum, against which the occiput rests ; and round this the head revolves, passing with its greatest measurements successively along the hollow of the sacrum ; it then meets the resistance of the coccyx and perinæum, which, by frequently repeated efforts, it ultimately dilates to an extent not before suspected, and at length the child enters into the first period of respiratory life. I shall hereafter have to refer to this mechanism of parturition more particularly.

I have directed your attention to two points of view in which the profession you are about to enter is calculated to give you a lively interest in its study. I would ask you now to consider it with me in another light, as a subject of practical importance, which should not be treated as a pursuit so easily followed as to need but little attention. One or two examples will be sufficient to convince you of the contrary, and to illustrate where the difference between the educated and ignorant practitioner would at once be apparent. I shall take one of the varieties of uterine hæmorrhage, that which arises from the circumstance of the placenta being situated immediately over the mouth of the womb. When this occurs it constitutes a case of the most dangerous character, because we have no means of arresting the hæmorrhage, unless by removing the child : the more the labour pains dilate the mouth of the uterus, the greater the flooding. It is therefore of the utmost consequence to be able to ascertain this situation of the placenta early, in order to be prepared to deliver at the proper time. How can you do so, unless you are accustomed to the peculiar feel which the uterine surface of the placenta presents ? My assistance has been called for in more than one instance where the supposed placental presentation was only a large clot of blood retained between the membranes of

the child and the uterus, long enough to feel as firm and resisting as the afterbirth. If the mistake had not been discovered, you can readily judge what a serious blunder would have been committed by making an attempt to pass the hand into the uterus to deliver the child. I could record instances in which the life of the patient had been lost from an error on the opposite side; in which the situation of the placenta was unknown until too late, and the patient sacrificed to indecision and want of tact. Such a result is too serious not to urge it on your consideration as an argument in favour of the importance of acquiring a practical knowledge of midwifery.

Another example might be taken from those positions of the child called cross-births, or shoulder presentations. In this, as in the former instance, promptitude is essential. The educated practitioner will at once detect this position, and be prepared to deliver the child as soon as he can safely pass his hand into the uterus; but this position is by no means so easily detected that the unpractised hand will at once discover it. When the subject comes properly before us, I shall take occasion to point out the different sources of error: for the present I shall allude to two. When the shoulder presents, and that the hand and arm are still retained in the uterus, it bears, in many points, a strong resemblance to the breech-presentation: it has been mistaken for a breech, and consequently left far too long to the natural efforts for security. Again, the hand and arm will sometimes descend with the head, and often so much before it, that the hand will appear at the external parts long before its descent. I have known this supposed to be an arm-position, and only the mistake were pointed out, would have been a reason for making the attempt to turn the child. In the progress of this course I shall have to point out other similar instances which I am persuaded will be sufficient to convince you, if any doubt remain, that midwifery, viewed as a practical study, demands from you as much attention as any other branch of your professional education; while I think you will be satisfied that the consequences which follow from ignorance and presumption are even more serious in obstetrics than in other medical pursuits.

If then, gentlemen, you will admit with me, that the studies you are about to enter upon are of a character sufficiently elevated to stimulate your zeal, and sufficiently important to command your industrious attention, it remains for me to offer you a very few remarks on the mode by which it appears to me you would best acquire a competent knowledge of it, as well as to guard you against some errors respecting it, which are, unfortunately, too prevalent.

There is one feature peculiar to midwifery in which it differs from the other branches of

medical study. In your observation of disease, whether it be medical or surgical, every single case that comes under your notice forms a new subject of attention; between different cases there may be few points of resemblance, and a very few cases of one disease, if accurately observed, will hardly fail in making you acquainted with it. It is not so in midwifery. You will meet case after case of an apparently similar character; the junior student is consequently often led to believe that there is little to learn in obstetrics. He takes for his motto "*ex uno disce omnes*;" and in this indolent security is often surprised into a new and untoward series of difficulties, which will equally excite his alarm and bewilder his judgment. You should therefore remember that it is only by a patient observation of those cases of everyday occurrence, by a close study of the phenomena of natural labour, and by a careful collection of those facts which are always within his reach, that the practitioner can be prepared to understand and to remedy the exceptions which may arise. It is to the *habit* of observation thus acquired, to the "*tactus eruditus*" by frequent practice obtained, that the student should calculate upon the certainty of his success in future practice. It is essential for you to understand the theory of your subject; but I would caution you against indulging too much in theoretic inquiries. The present age may well be called the age of theory; nor have we escaped its general influence: even with us theories vegetate in such wild and abundant luxuriance, as by their very number and intricacy to conceal from view the commonest lessons of experience. If not useful, it is at least amusing, sometimes even fascinating, to follow the fine-spun reasoning upon which some theories are founded. To examine such curious questions are much more interesting than to sit at the bedside of a patient for hours, contented to watch the progress of a labour of which you think you know, and have seen enough already; but, gentlemen, I would repeat to you, be not deceived; the more you advance in the knowledge of your profession, the more you will perceive the infinite value of these very cases. You will find each presenting you a new matter for observation; and that it is by a close attention to those cases which recover well, and which need but little assistance, that you will at once perceive an unusual symptom, or be able to obviate a threatening danger. If you are not accustomed to the pulse, the feel of the abdomen, the tongue, the natural sympathy of the stomach, or the general aspect of the patient, whose recovery is favourable; the gradually increasing heat of the pulse, the commencing tenderness and irregularity of the abdomen, the unhealthy irritation of the stomach; nay, even the distension of the

bladder; all will escape your notice until they become so obvious that you could have wished most heartily that you had seen the coming tempest a little sooner. In the usual routine of ordinary cases, there are many points which, if attended to, will convey to you much useful information.

The stethoscope will afford an extensive range of practical observation. The ear, like the other senses, requires practice to discriminate. A musician will detect a discord which would escape the uneducated ear; and thus you will not be disappointed if you find it difficult in your first attempts to distinguish the uterine from other similar sounds which may be heard in the abdomen. Persevere, and you will soon find that your time has not been misspent, in the readiness with which you will detect the placental murmur and pulsations of the foetal heart. You have then established not only an evidence of the life you are about to aid in bringing into the world, but you have opened for yourselves a new field from which you can glean many interesting facts. The action of the foetal heart before and subsequent to its respiratory life, the foetal as compared with the maternal pulsations, the variety in the positions of the placenta, may all be ascertained; and though you may not at once perceive the immediate utility of such experiments, you will hereafter find their value in determining questions connected with the general physiology of the circulation, as well as with practical midwifery.

You will also learn to discriminate many causes which, in your first attempts, excited confusion. The large arteries of the abdomen, when compressed, produce a bruit, which you will soon distinguish from the placental soufflet. The pulsations of the maternal heart heard through the abdomen have been confounded with the foetal: your practised ear will detect these and other sources of deception; and it is possible you will discover other errors which have not yet been observed.

I might also allude to the varieties which are met with in those presentations which are classed as natural. I have given you a general outline of the manner in which the head of the child passes through the pelvis. When we shall have occasion again to allude to this process, we will find that, in this as well as in every thing else, nature will not be restricted to an uniform rule, but that the head passes through the cavity in different and often opposite directions. As these varieties are always within the power of observation, one would suppose that the nature of these deviations must be already quite determined; and yet, among obstetric authors, there is nothing upon which there has been more contrariety and mistake. The

older writers in midwifery always made the head to pass in the conjugate measurement of the pelvis—a direction which it very rarely takes. More lately this error was corrected; and Baudeloque (whom I might call the Denman of France) has given a description of these presentations with much apparent accuracy. He has been indolently followed by a host of writers, who judged that he must be right simply because, in their study, with the naked bones before them, the explanation appeared ingenious and consistent. It was reserved for the late distinguished Naegele, in an hospital by no means large, and with a very limited number of facts, to dispute the whole of their description. Being interested in the beautiful mechanism of parturition, anxious to observe it, and determined to judge for himself, he found so many exceptions to the rule he was taught, that he began to doubt its truth: further observation satisfied him it was erroneous, and at length he boldly and successfully denied the statements which were made. I quote him, therefore, to you as an example quite within your power to follow, and one which proves the value of observing the phenomena of ordinary natural labour which are presented in every case you attend.

I have thought it right, gentlemen, to bring before your notice these different subjects of study, in order that it may be an inducement for you to observe these ordinary cases, because teachers generally find that, whether it arises from a desire for novelty, or from an erroneous impression as to their future practice, pupils almost always are led to neglect what is to be met with every day, while they rush in crowds to witness what they may never be called upon to perform. The experience of those surgical professors whom, elsewhere, I have had the opportunity and privilege of knowing, has always been, that too frequently, while the common course of hospital duties are negligently attended to, their pupils fly to the operating theatre; and that case which it is least likely they may even again meet with, is that which will bring the largest crowd. It is hardly different with midwifery: an interest attaches to the performance of an operation that an ordinary case can in no way excite; and I have known the greatest discontent, when an opportunity of this kind was lost, manifested by pupils who could scarcely be persuaded to perform their necessary duties.

There cannot be a more dangerous mistake: it shall be my duty to make you acquainted with all the operations in midwifery, but, at the same time, permit me to assure you that the best practitioner in midwifery is he who has the fewest operations to perform; and when you will know that in the largest hospitals, where, of course, cases are admitted which you will seldom or ever meet



with in private, the proportion of operations do not exceed 1 in 100 cases, you can readily decide upon the number of times you may be called upon to operate. It is true it may be objected that the young practitioner may be required to operate in the outset of his career, and when he least expects it; but I have no hesitation in replying that the facility with which an operation is performed depends much more on the nicety of touch which you have previously acquired; by which you know every point to which you apply the instrument; by which you are conversant with the relative position of all the parts; than by ignorantly thrusting it, you scarcely know where, in the feeble attempt to imitate what you may have seen, without any thing to guide you but what, at the best, would be but a lucky chance. If you have previously laboured at the bedside, and have made yourself fully conversant with the phenomena of parturition, you will not only be best prepared to avoid an operation, but, if you should have to perform it (even for the first time) in place of finding it difficult, you will be rather surprised at the facility of your progress. In fact, the embarrassments and bad success of operations in midwifery are caused, with few exceptions, not so much by anything very complicated in the operation itself, as by the operator's want of tact—a quality not to be acquired by frequent operations (for in such a case he must make operations for himself), but by patient attention to those cases I have already alluded to, and which can alone form the basis of a successful practitioner.

I have felt it my duty to lay before you in this manner the nature of the profession you are about to study, as well as my views of the method by which you will best acquire an adequate knowledge of it. In the course of instruction you are about to receive, it is my wish, and shall be my endeavour, not to confine it to the precincts of this theatre; but, as far as lies within my power, to aid your clinical observations. I feel assured you will appreciate my desire to guide you in this the only true course of professional improvement; and if I have succeeded in proving to you that obstetrics holds out sufficient inducements to allure you to its study, and in its practical results is too important to be treated with indifference or neglect; if I may expect your co-operation in patiently observing and recording facts for their own sake; I have very little hesitation as to the result. If I were to look back into the history of my profession, and in the biography of its most eminent cultivators seek for the leading principle of their reputation, it would not be found in the brilliancy of their genius, nor the power of their talents, but in their patient and persevering attention to

every-day facts. Amongst them were those who, perhaps like some of my hearers, entered upon their professional career under difficulties which, at the time, appeared almost insurmountable: they were contented, however, to struggle patiently from step to step until they overcame the obstacle immediately before them; instead of making this their resting-place, it only enabled them, with a surer footing, to grasp some higher difficulty, until at length, by persevering and watchful industry, they attained the highest object of their ambition, in being placed at the head of their profession, as well as being considered its best benefactors. They did not seek to gain celebrity *per saltum*, and were, therefore, not discouraged by indifference to their early exertions. The growth of their reputation, like the oak, was gradual, its stability permanent; not shooting up suddenly to the full height of professional distinction, but often remaining for a long time in neglected obscurity. Attempts were often made to trample on the rising plant; but these efforts only served to increase its strength, until at length, overcoming all opposition, it attained the full vigour of maturity, and thus they diffused around them the fruits of a cultivated mind with a luxuriance that equally commanded admiration and respect.

I only ask you, gentlemen. (such of you, at least, as purpose to make midwifery the especial object of your attention), to follow in their *first footsteps*, to imitate their *early efforts*. It shall be my object to assist your endeavours to the utmost of my power; and if the humble individual who has now the honour to address you is in any way the means of contributing to your future successful career, it will be a rich and gratifying reward for any exertions which may now be made to accomplish so happy a result.

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CLINICAL LECTURE  
ON  
DELIRIUM TREMENS.

*Delivered at King's College Hospital,  
Nov. 20, 1841,*

BY GEORGE BUDD, M.D., F.R.S.,  
Professor of Medicine.

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I wish to call your attention to the case of John Embleton, a sailor, who was brought into the hospital on the 16th, in a state of violent delirium.

He arrived in London from St. Petersburg three weeks before; when, his ship having been paid off, he began drinking. He was constantly drunk for twelve days, and during that time scarcely tasted solid food. When his money was spent, he pawned his watch; and when the supply from this too



was exhausted, he was obliged to leave off drinking. This was about nine days before his admission to the hospital.

From that time he had no appetite, and scarcely any sleep. On the 13th, after six sleepless nights, he was very desponding and irritable. The next day he was in a state of raving delirium. He said thatadders were about the bed attempting to bite him; and fancied he had murdered his wife. During the 15th he was more tranquil, but in the evening he became again violently delirious, and continued so throughout the night. He attempted to climb the bed-posts, taking them for masts.

At the time of his admission he was very violent, and fancied he was surrounded by frightful serpents, that were constantly trying to bite him.

One fluidrachm of tincture of opium was given him immediately, and ordered to be repeated every hour for three successive hours, if it should not procure sleep before. Immediately on his awaking he was to have a mutton chop, and a pint of porter.

He fell asleep after the first dose of opium, and slept for several hours. When he awoke he took his mutton chop and porter. The opium was not repeated, but he slept quietly great part of the night. The following morning we found him perfectly rational, and his appetite had returned. He was ordered middle diet and porter, and a dose of opium at night.

He had no return of delirium, and left the hospital on the 20th.

The case of Embleton is a fair specimen of the delirium brought on by excessive drinking. During the years I was physician to the Dreadnought, I had constantly cases of this kind under my care. The frequency of delirium tremens in sailors is very readily explained.

When a ship returns from a long voyage, the crew are paid off. A man receives at once £40, £50, or £60, and is immediately laid hold of by the most despicable of human beings—the *crimps*, as they are called, or the agents of the keepers of the filthy lodging-houses in the neighbourhood of Wapping. He is taken to one of these houses, and kept in a state of constant intoxication for a fortnight or three weeks. By this time his money is generally spent. His clothes are then pawned, and this supplies him with drink a day or two longer. When this last resource fails, when the system of robbery can be carried on no longer, the supply of drink is stopped, and the sailor is turned adrift to shift for himself. In a few days he is brought to the hospital in a state of delirium tremens.

I have known sailors, who had received as much as £70, reduced to complete destitution in the course of two or three weeks.

During the time they are kept in this state of intoxication they eat nothing, often not so much as a morsel of bread, for days; they live, as they express it, on the liquor.

When they are brought to the hospital, the condition of all these men is very much alike. The face is flushed, the eyes are suffused, and there is often a peculiar wildness in their air and manner, even when there is no actual delirium. The tongue is pale, moist, and indented; and the hands as well as the tongue are very tremulous. Appetite is quite gone, and they have generally repugnance for food of every kind. In spite of this nervous agitation the pulse is steady and tranquil, and very seldom increased in quickness.

But what is characteristic of the disease, as characteristic as the trembling, is the loss of sleep. They all tell you that they have had no sleep for nights; and that the moment drowsiness comes over them, or even without this, at the approach of darkness only, they are haunted by visions of the most frightful kind: they see serpents about the bed, and are pursued by devils of every size and shape. The constancy of these horrid apparitions has furnished a name to the disease. The term, in fact, by which it is known to sailors, and a very appropriate one it is, is the "horrors."

This name has, no doubt, passed down through many generations of sailors. Smollett uses it in *Roderick Random*. Smollett, in early days, was a surgeon's mate in a man-of-war, and sketched Roderick from the life. Roderick, in relating his history, says, "I awaked in the horrors, and found my imagination haunted by such dismal apparitions, that I was ready to despair." This very properly happens to Roderick, a day or two after he set sail. In delirium tremens from drinking, the patient generally gets more violent, and is in every respect worse, a day, or two or three days, after he has left off drinking. Sailors are themselves aware that a glass of grog steadies them when in this condition.

In some cases, the men are more violently delirious: they are continually vociferating, and talking in the wildest and most incoherent manner; they are in a state of great agitation and tremor, and their body is bathed in sweat; yet even in these cases the pulse is generally calm and steady.

The character which the delirium assumes is that of hallucination. They see unreal objects, and these objects are almost always of a frightful kind. In some cases, but these are rare, the illusion extends to the sense of hearing. They hear the objects by which they are haunted, talking, and occasionally calling them by name.

But hallucination is more rare for the sense of hearing than for that of sight; pro-

bably because more vivid impressions are received through the eye than through the ear. Ghosts are more frequently seen than heard. Dr. Abercrombie thinks that dreams are chiefly occupied with objects of sight. In his work on the Intellectual Powers, he says, "I am informed by a friend, who is a keen sportsman, that he often dreams of being on a shooting excursion; that he starts his game and points his gun, but never succeeds in firing it. It sometimes seems to miss fire; but in general there is something wrong in the lock, so that it cannot be moved."

It was probably the poet's own experience that frequent and deep potations give birth to hallucinations of a frightful kind, that suggested to Burns the scene of the witches in *Tam o' Shanter*. Tam, returning late after a drinking bout, passes by All Hallowe'en Church, in which he sees warlocks and witches in a dance, with Auld Nick for their piper. The objects with which the fancy of the poet has filled up the picture are certainly frightful enough:—

"Coffins stood round like open presses,  
That shawed the dead in their last dresses;  
And by some devilish cantrip slight  
Each in its cauld hand held a light,  
By which heroic Tam was able  
To note upon the haly table,—  
A murderer's bane in gibbet-airns;  
Twa span-lang, wee, unchristened bairns;  
A thief new cuttit frae a rape,  
Wi' his last gasp his gab did gape;  
\* \* \* \* \*  
A garter which a babe had strangled;  
A knife a father's throat had mangled,  
\* \* \* \* \*  
Wi' mair o' horrible and awfu',  
Which e'en to name wad be unlawfu'."

This description, though highly coloured, is true to nature; but such hallucinations usually arise after prolonged excess, and not, as Burns makes it, after a single sitting.

Another character, very general in these cases, which seems allied to the frightful nature of the hallucinations, is despondency and a tendency to suicide. Even in slight cases I have known men suddenly burst into tears while I have been questioning them.

Well-marked cases of delirium tremens are easily recognized. Their characters are so striking, that, taken with the previous history of the patient, they can scarcely be mistaken; but this is not the case with the slighter degrees of the same affection. These are marked only by lowness of spirits, and inability to sleep; or by sleep which is interrupted by frightful dreams. It is a condition which is familiar to many by the name of the "blue devils," which, in the majority of cases certainly, must be ascribed to excess in drinking. Men of jovial habits—who take what is called a cheerful glass, and enjoy company and good cheer—are re-

markably subject to the blue devils. They are low and desponding in the morning, and their nights are sleepless, or their sleep is broken by dismal dreams. In the language of sailors, they have the "horrors." It is the temperate man only whose spirits are uniformly good.

Embleton told us that the objects by which he was haunted, though continually shifting their shapes, were always of a blue colour. I have often heard sailors make the same remark; and I am inclined to think that this is a very general character of such apparitions. Müller, speaking of phantasms, says that they are generally divested of colour.

I have said that in delirium tremens, the pulse, except after considerable muscular exertion, rarely exceeds its ordinary frequency. In cases in which it does, there is generally inflammation of some internal organ.

The organs most frequently inflamed are the stomach and the lungs.

It is not at all uncommon to find a man affected with the horrors, who, in addition to the ordinary symptoms—the delirium and the trembling—has frequent vomiting, a furred tongue, and a quick pulse. Such symptoms generally indicate inflammation of the stomach, and are of very bad augury; because, when they are present, the patient is unable to take solid nourishing food, which is a very important part of the treatment, and, indeed, frequently indispensable to recovery. In a case of this kind I have found the mucous membrane of the splenic extremity of the stomach reduced to a mere pulp.

The *lungs* are much less frequently inflamed than the stomach; but I have met with two or three instances of delirium tremens which proved fatal, apparently from the occurrence of pneumonia.

In none of the cases in which I have made an examination after death—in all, four or five—have I found any evidence of inflammation within the head, other than effusion of serum under the arachnoid. The symptoms do not depend on any inflammatory affection of the brain, but on exhaustion, consequent on over-excitement, and in part, perhaps, on the condition of the blood. We can hardly suppose that the blood should not become altered, and for some time remain so, by the continual admixture of spirits. The spirit undoubtedly exerts some degree of chemical influence.

Sailors, in whom I have chiefly observed delirium tremens, are men whose constitutions are not broken by habitual intemperance, but strong, robust men, most of them in the prime of life, who get drunk only while they are in port. From these circumstances the affection in them is somewhat different from what it is in the habitual drunkard; but the main characters and the indications of treatment are alike in both.

The chief remedy is *opium*; but it must be given in large doses, so as to procure sleep. In small doses, it does comparatively little good. When a man has been for days in a state of nervous agitation, and has had no rest for several successive nights, our object should be to procure *sleep*. I have often, as in the case of Embleton, seen a man in a state of raving delirium fall asleep under the influence of a large dose of opium, and, at the end of some hours, awake perfectly rational.

The plan into which I settled for the treatment of delirium tremens, such as I used to meet with in sailors, is to give one drachm of tincture of opium, every hour, for three or four successive hours, if the patient should not fall asleep before; and, as soon as he awakes, to give him a mutton chop, or some solid food.

I have already told you that these men, as long as their drinking bout lasts, eat nothing; and although, while the state of excitement continues, they have great seeming strength, and in some cases can be mastered with difficulty, yet, as soon as it subsides, they are always in a state of debility, and evidently require nourishing food. This is indicated, even while the delirium persists, by the condition of the tongue, which is almost always, in these cases, more or less indented; a condition you will generally find associated with states of debility.

Before they have slept they are unable to take food; their appetite is completely gone; a circumstance which must be attributed not to the state of the *stomach* merely, but to that of the whole nervous system; for the appetite generally returns when the system has been refreshed by sleep.

I consider this point—to give as soon as possible some solid food—a most essential one in the treatment; and have almost invariably found men get worse in cases where, from some mistake or neglect, it has been omitted.

I have said that opium should be given in large doses; but even these sometimes fail in procuring sleep. It is indeed astonishing how much of it can be taken by persons in this state of nervous excitement without sensible effect. In one instance in which I had left directions that a drachm of laudanum should be given every hour until the patient slept, 3x. were given in the course of 24 hours, without producing the slightest sign of narcotism; and it was only after the last dose that the patient fell asleep.

A similar insensibility to the ordinary effects of opium is witnessed when it is given to relieve very severe pain or spasm. Doses, which in other circumstances would be dangerous, may be given not only with safety, but without apparent effect. But although large doses of opium may be given, and are even required, to relieve severe pain,

or to control violent spasm, or to calm the nervous excitement of delirium tremens, you must not suppose that its employment requires no caution in these cases. The rule generally laid down, and I believe it is a good one, is to discontinue the opium when it has produced contraction of the pupil. Different narcotic substances produce different effects on the pupil. Belladonna dilates it; the first effect of opium is to contract it. Contraction of the pupil shows, therefore, that the system is powerfully affected by the drug, and should caution us against its further employment.

When the opium acts favourably, when it procures a quiet sleep of several hours, the benefit resulting from it is remarkable: the delirium has ceased, the agitation has subsided, and, if the appetite have also returned, the patient is convalescent. But in some cases, opium, in however large doses we give it, fails in producing this effect. It calms the patient in some degree, and brings on a dosing state, which is often interrupted by startings, and from which the patient arises but little refreshed.

In many such cases, where opium had failed in composing the patient, I have seen admirable effects from wine or brandy, especially where the patient had left off drinking for several days. The delirium and nervous agitation seem to result partly from the sudden withdrawal of the stimulus. I have already remarked that the men are generally much worse two or three days after they have left off drinking, and that they are themselves aware that a glass of grog steadies them. But I would only give wine or spirit when opium had failed to procure sleep, and when the delirium had persisted some days after the patient had discontinued drinking.

Another important point in the treatment of delirium tremens is, that the patient should be removed as much as possible from all causes of excitement: his room should be quiet, and few persons should be allowed to visit him.

The last point that I wish to impress on you, is, the great importance of narrowly watching the patient. I have already stated to you that in this disease, even in its lighter shades, the patient is possessed by gloomy ideas, and has often a strong propensity to suicide. He should therefore be narrowly watched, and every instrument by which he can effect self-destruction should be placed out of his reach.

For want of these precautions, we had a very tragic scene on board the Dreadnought, in the summer of 1838. Three men, Parrymore, Baily, and Forster, were brought into the hospital the same day in delirium tremens. They were treated in the usual manner; and I believe a straight-waistcoat was placed on each. The day after their admission, Parry-

more was very much better, and gave me a clear account of many particulars of his case—as, of the voyage he had last made, the time he had been in port, and the money he had spent. All restraint was in consequence left off. The same evening he cut his throat with a clasp-knife, which sailors generally carry about them. The surgeon, who was in immediate attendance, found him sitting up in bed, bleeding profusely, and still hacking away at his throat, to all appearance perfectly insensible to pain. The divided vessels were tied, and the hæmorrhage stopped; but he died at the end of a few days, from the secondary effects of the wound.

Baily also, the day after admission, gave me a clear account of many particulars of his case; and I considered him in no danger. The excitement and commotion in the ward consequent on the attempted suicide of Parrymore, again threw him into the most violent delirium, in which he continued for two days. On the fourth day after his admission, I found him very hoarse from vociferations, but tranquil and rational. The strait-waistcoat was taken off, and orders were given that he should be narrowly watched. The same evening, however, he eluded the vigilance of those about him, and threw himself out of one of the port-holes into the Thames. A boat was immediately sent after him, and he was soon picked up, swimming lustily between the Dreadnought and the shore. When in the boat, he struggled violently to throw himself again into the river; and such was his muscular power, that it was with the greatest difficulty the two men in the boat could master him. They succeeded, however, in doing this; but Baily, apparently exhausted by his struggles, almost immediately expired. He was lifted into the Dreadnought a corpse.

We could not examine the body before a coroner's inquest had been held; and as this was not done for some days, and the weather was very hot (it was the middle of July), the body was too far advanced in decomposition to enable us to form a satisfactory opinion of the cause of his sudden death. I believe, however, that he died of pure exhaustion—the consequence of the powerful efforts he had just been making. He was one of the most muscular men I ever saw, and had no organic disease.

These cases, as you might expect, have made me very watchful over patients in delirium tremens. They should not be left a moment unguarded; and in hospitals, where they cannot have a person in constant watch over them, I would always put on a strait-waistcoat, whenever I could do so without using violence, or increasing the agitation of the patient. I make this exception, from a sense of the ill effects of excitement, and of the exhausting influence of great muscular exertion.

But delirium tremens, or at least a condition very similar to that brought on by excessive drinking, may be caused by any great shock to the nervous system, especially by surgical operations, or severe injuries.

When induced by this last cause, it is called traumatic delirium. But its characters are precisely like those I have before described:—nervous agitation, trembling, inability to sleep, and hallucinations, generally of a dismal kind.

The insensibility to pain (which I have before noticed in the case of Parrymore) in these cases is truly remarkable. Dupuytren, who has left a beautiful description of nervous delirium, says, that he has known patients in this state, with a comminuted fracture of the leg, slip off the bandages and walk about, using the broken limb without evincing the slightest pain; and others, who had been operated on for hernia, introduce their finger into the wound, and amuse themselves with twisting about the gut, as if they were doing it on the dead body.

He also particularly remarks, as all writers on the subject do, the state of the pulse. He says, “the most remarkable symptom, in the midst of this disturbance of the intellect, is the calm of the circulation, and the absence of every febrile symptom. You see a patient furious; his face covered with sweat; his eyes glistening; his cries heard at a distance: you believe him affected with the most intense arachnitis. Approach him: his pulse is calm and regular; and the state of his skin removes every suspicion of inflammation.”

The treatment in these cases is the same as in the delirium tremens from drinking. Opium is the chief remedy.

Dupuytren gave it in injections. He says that a dose of opium administered in this way has as much effect as three times the quantity given by the mouth. He explained this by supposing that when opium is given by the mouth, it is, in some degree, altered, and rendered less effective, by the juices of the stomach.

But, in other circumstances, you will occasionally meet with a condition of the nervous system very similar to delirium tremens.

In the 19th vol. of the *Med. Chir. Trans.* is a paper by Dr. Seymour, containing three cases of mania, successfully treated by morphia. They all occurred in women.

In the first case the woman became affected, after suffering severe distress, in consequence of the death of a relation, who died in her presence. She was occupied by gloomy ideas, and a belief of having committed indescribable crimes. Her nights were sleepless, and there was continual watchfulness, and restlessness of the body. Her pulse was not weak, and her bodily health was unusually robust. She recovered

in six weeks, taking a grain of acetate of morphia every night.

In the second case the history is obscure. The woman had been bled and blistered for what was conceived to be inflammation of the lungs. She was extremely violent; fancied that her children were murdered, and their spirits returned to torment her. Her sleep was broken. There was no fever. She recovered under the same treatment.

In the third case there was great previous affliction; and the mania came on after childbirth. The symptoms were nearly the same, and she recovered under the same treatment.

It is impossible not to perceive the analogy between these cases and those of delirium tremens. There is the same absence of fever, the same restlessness, the same want of sleep, and the occurrence of visions and dreams of the same character, in both.

All the instances I have mentioned agree in the absence of fever, and in the regularity of the functions of the body in the midst of the general nervous disorder; in the presence of gloomy ideas and frightful dreams.

It seems, then, probable that opium will be beneficial whenever there is a combination of these conditions. Dr. Seymour says, "morphia appears to be of more use in what is termed melancholia, where the mind is tortured by imaginary want, ruin, or crime, than where the derangement partakes of more brilliant ideas; as of superhuman knowledge, dexterity, or wisdom: or than in those cases where one single idea occupies and absorbs the mind."

I have seen one or two instances in which a state very much like that in the cases related by Dr. Seymour, resulted from excessive study.

One was in a man with whom I was well acquainted at Cambridge. He became insane after an attack of scarlatina in the summer of 1828. He had been reading excessively hard, and was much exhausted, when he was attacked with scarlatina on his way to the Lakes, to spend the summer vacation. He was laid up with scarlatina a fortnight; and soon after was placed in an asylum, where he remained two years. At the end of this time he was released, resumed his reading at Cambridge, and took a wrangler's degree in the year after that in which he would have taken his degree in the ordinary course.

The character of his insanity was like that of persons in delirium tremens. He fancied that he was constantly surrounded by devils; and even now, ten years since leaving the asylum, he is convinced of the reality of these apparitions.

My attention has lately been called to another case of the same kind. A man, like the former, became insane after hard

reading; and his insanity was of the same character. He was placed in an asylum, where he continued some years. Since his release he has turned author, and the books he has written display considerable talent.

I have little doubt that such cases are allied to delirium tremens—that the insanity is the cause of nervous exhaustion—and that it is best treated by opium, generous living, and quiet; means so efficacious in the various forms of delirium tremens. It would certainly afford a medical man a high gratification to cure a case of this kind—to restore an educated and gifted man to his family and himself; but there is very little satisfaction in curing a man of the delirium that results from drinking, because he is almost sure to get into the same state again. The only chance for him is to become a tee-totaler.

Experience of the "horrors" has certainly very little influence in deterring sailors from a repetition of the excesses by which they are brought on. Embleton told us that he had had the "horrors" twice before; and men have often confessed to me that they have had them as many as seven or eight times. I am afraid, therefore, that Burns's parting advice, in *Tam O'Shanter*, has been lost on the lovers of tippeny:—

"Whae'er this tale o' truth shall read,  
Ilk man and mother's son tak heed;  
Whene'er to drink you are inclined,  
Or cutty sarks rin in your mind,  
Think, ye may buy the joys owre dear;  
Remember Tam O'Shanter's mare."

## ON ARTIFICIAL CLIMATES,

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH: TO BE CONSIDERED UNDER

I. *The atmospheric treatment of the lungs.*

II. *The atmospheric treatment of the lungs and skin.*

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 163.]

*On instrumental means for producing  
an atmosphere genial to the lungs  
when in an irritated state.*

THAT the mind should be excited to an earnest desire to command those artificial varieties of atmosphere respirable with comfort and benefit by the pulmonary sufferer, little, I would hope, need be added to the preceding arguments, although they by no means comprise all that is of importance to the question.



That we may be guided rightly in the choice of practical measures, it is necessary to keep present in the mind the points of chief consideration.

Briefly, then, to recapitulate. It has appeared, in the first place, that many of the severest symptoms in chronic diseases of the lungs are, in a great measure, due to the condition of the air respired; and that we must not form any judgment against this conclusion on finding a limit set to our trials by the effects of an atmosphere which envelopes the whole body; since, with sound reason, we may expect very different results when the atmospheric remedy is applied only to the part affected: therefore that our measures should provide a different atmosphere for the lungs, while irritable, from that which invests the body.

Secondly, that our measures should provide for the exhibition of our atmosphere being unremitted, and unattended to by the patient.

Thirdly, that whereas breathing an untempered air habituates invalids to a suffocative kind of respiration, which leads to an unhealthy state of the blood and system generally, and thus reacts upon, and aggravates, the malady itself, it is to be desired that our measures should supply air of that bland quality by which it may be freely respired, and in quantity sufficient for the freest demand; and that they should, at the same time, ensure the discharge, with equal freedom, of all air rendered stale by being respired.

Fourthly, that where they are to be employed for soothing the system into rest at night, our measures should not interfere with the accustomed retirement to bed, and the recumbent position; nor with the unrestrained movement of the body.

Fifthly, that the same or other measures should be adapted to the patient's movements about a house in the day-time, since, upon the grounds established, I would hope by abundant argument, the exhibition to his lungs of the modified atmosphere should be *unremitted by day as well as by night*, so long as any cough or other atmospheric symptom is present, manifesting the general atmosphere to be unsuited to the excitable state of the pulmonary membrane. In every case of chronic disease there are periods of many days together, when it is my firm conviction,

supported by frequent observation, that a patient would be greatly benefited by respiring, night and day *unremittedly*, an atmosphere adapted to the lungs alone. There is now no want of evidence to justify the expression of such an opinion without hesitation.

Sixthly, that the indirect injury which irrespirable air produces, by confining invalids at home, is of so serious an amount to the general health and to the spirits, and thence to the lungs themselves, that our measures should embrace, if possible, the highly desirable object of releasing them from a dispiriting confinement, to enjoy exercise in the open air, with their limbs unembarrassed by any apparatus, yet their lungs being supplied, wherever they turn, with just such an atmosphere as we may wish to exhibit to the sensitive membrane.

Seventhly, That, since a heavy load of clothing, however necessary in other respects, is unquestionably oppressive to the skin, tending to disturb its functions, and to produce a kind of partial *cutaneous suffocation*, it is, at least, desirable to consider whether we can by other means than heavy clothing preserve so much of the warmth of the system as shall admit of some portion of the garments being lightened without any the least chilling of the surface\*. This is not, indeed, any direct or necessary part of a treatment of the lungs; but it is of too much value to

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\* The correctness of this view will not, I conceive, be at all disturbed by a line of treatment lately introduced, it is said with good effect, in certain stages of pulmonary disease, where, under an air-proof waistcoat, the skin over the chest is kept moist, not only by the confined perspiration, but also by a moistened cloth, or sponge, worn all day. If this treatment is as beneficial as I have heard it pronounced, it offers to our view an interesting inquiry. It is plainly a condition of the portion of the skin so treated, the very opposite to that which obtains in a tropical climate, with light clothing under a dry air. In the former case, the perspiration, though apparently increased, is actually diminished; a portion of that which was passing off as insensible, being now detained as sensible perspiration. Perhaps we may view this as a case where a vicarious action is induced in the pulmonary surface within, by the suppression without, leading to a freer exhalation of moisture over the membrane, and consequent partial relief from one prevailing cause of distress I have dwelt so much upon, namely, the exsiccating action of the air. Any such treatment, however, could, I imagine, only act with benefit for a time, and it does not at all militate against the importance of a permanently free action of the skin, and a consequent lightening of heavy clothing, so far as perfect security against cold will permit.

be lost sight of, if it can be commanded as a collateral acquisition.

Eighthly, That with respect to the grand question, namely, the changes to be wrought on the air, our measures must act both upon physical and mechanical principles. The former, to modify the *temperament* of the air; the latter, for separating from it dust, soot, and other particles of solid matter suspended in it. With respect to the first, the *temperament* of the air, we find that one general indication in this climate is to raise its temperature, its coldness being the grand irritant. The next point is to modify its condition in regard to moisture. Even a cold air is often far too dry for a membrane, to which, as has been abundantly shown, evaporation is no comforting process: and however moist the air may be at a low temperature, if we raise it to a summer heat we give it so many degrees of dryness as to disqualify it altogether for the soothing action desired. Hence we must command means by which to add moisture to it; and however injurious damp air is to the lungs when cold, or, again, warm air when not moist, if we combine both agents, warmth and moisture, and *administer them only to the lungs*, we shall find in practice that irritable lungs, in a large majority of cases, rejoice under the soothing influence of air warm and moist to a considerable degree.

It will be readily conceived that any mind upon which the above indications have been deeply impressed by a contemplation of the subject at large of pulmonary distress, must be impelled to an earnest desire to possess the instrumental means for giving effect to them; and it will appear, that of these eight indications, some might be carried out while the body was at rest, and in bed; while to fulfil the whole of them, the body must be free for locomotion, and for exercise out of doors. The former case might be presumed more easy to be dealt with than the latter; and to myself it proved so.

Hence, when impelled by the various considerations which have been detailed throughout these papers, while my attention was directed only to the case of a person in bed, it did not prove very difficult to devise means by which I believe the desirable varieties of

atmosphere might be afforded to the lungs without intermission; also without inconvenience to, or attention on the part of the patient, and without involving the whole body in its operation. It differs, in many respects, from the apparatus, of which I ventured to give an outline while proposing a treatment, akin to the present, for acute diseases in hospital practice; but, as it has not been ever constructed as yet, I am unwilling to occupy the time of the reader by entering into any detail respecting the peculiarities of its construction.

Great, and important, as would, I believe, be the relief afforded by such means to many nightly sufferers, the action of the apparatus would be limited to the night, excepting in the cases of bed-ridden persons. It would therefore, alone, not command the essential requisite of continuous action extended to the day; nor could it offer any of the great, though indirect, benefits certain to follow a release from confinement within doors. Nevertheless the need of atmospheric comfort by many sufferers at night is so urgent that, although they may command, by the aid of means about to be described, a considerable portion of the benefits indicated, I shall not relinquish the hope of reducing, at some future time, to effective operation, the above plan, adapted to the circumstances of a person in bed. It must admit of every desirable variety of temperament being given to the pulmonary atmosphere, while the selection of the choicest in each particular case would rest upon the sagacity and experience of the physician.

I have now to relate the progress of the endeavour to fulfil the whole of the above indications; a result which, if attainable, I felt would be of the greatest importance. Though I cannot, indeed, say it has been within the power of my humble labours to realise the whole to their full extent, and though I have to lament the inability to discern how this point shall be attained, I have to feel thankful that my exertions have not been unavailing, but that a success in the way of useful effect has attended them surpassing very much any anticipations I had ventured to form. I set to work, with the objects to be desired arranged before my mind in the order of their

importance; and in the Respirator is embodied all that I have been able to attain with a due attention to the demands of collateral and unavoidable circumstances.

Though the name of this instrument is well known to the public, and to a considerable extent its capabilities, the latter are by no means all appreciated, even by the many who avail themselves of the more prominent and immediate effects of it; and the profession in general does not yet, by any means, employ all its powers. With respect to its principle and mode of action, many particulars included in them have hitherto received little attention. These facts are attributable to my having offered, neither to the profession nor to the public, any detailed account of the instrument; and scarcely any matter beyond a pamphlet of a few pages, in which, upon the first appearance of the Respirator, the attention of the former was invited to its general objects. From my notes, a few materials have been, at times, abstracted for circulation amongst the public, by the parties to whom the disposal of the Respirator was consigned. I have long felt called on to publish a fuller account, with more carefully arranged details, especially since a large body of interesting facts connected with its action have accumulated, and since its extensive use by the invalid public has given it a notoriety, and interest, which lead to daily inquiries after some publication of a suitable character.

It is not my intention, however, to trespass at any such length on the pages of a professional journal obligingly opened to me; but I may desire to offer a few condensed remarks upon the principle and progress of the invention, and upon its observed action in a few of the more striking cases; since it might be shown that, in the absence of any proper account which would serve to guard against the accident, remarks upon it, altogether erroneous, have found their way even into recent professional works of deserved reputation.

Although I may be allowed to wish, that by more attention to the principles in science concerned, an author would avoid a misapprehension of my labours, I would not here trouble the professional reader upon such grounds; but there are professional and public

reasons which render necessary an endeavour to prevent the occurrence of mistakes of the nature alluded to.

The instance of one class of invalids alone will suffice to point out the importance of caution when writing upon such a subject. There are many thousand persons whose family duties compel them to remain in England, but do not permit them to remain at home, while exposure throughout the winter proves, in a few years, fatal to them. It is a fact, that of these, many hundreds are pursuing their labours from year to year with impunity under the protection of the Respirator. I take here the lowest ground, and leave out of the question those striking cases of gradual recovery under its use. It will here be evident, that to such persons the opinion which led them to place reliance on the instrument in the first instance was of vital importance, for to them the instrument has become of inestimable value; a fact which I need not hesitate to state, since it arises out of an urgent need on their part, which the Respirator happens to meet. Now if the numerous persons who have been recently instructed in the opinion that any roughly constructed article would answer all the purposes of the metallic instrument, should yield to it, and thereby, as a certain consequence, lose all the benefit of the principle, and perish, as many still do, from exposure, whose prejudices prevent their availing themselves of it, the effect would be far more serious, owing to the number misled, than of any incautious medical opinion upon a single case, however erroneous. It may be true, indeed, that the reputation acquired by the instrument will serve as an efficient guard to the invalid public, but it is to be regretted that they should have to owe to their own judgment and experience, protection against a professional opinion tending to mislead them in a serious degree; and it must be obvious that all such mistakes, however inadvertently made, are unfavourable for that growth of public confidence in the profession, so much to be desired, not less for the sake of the public than of the profession, in these days of wide-spread empiricism. Upon these grounds I feel called on to offer to the reader who will favour me with attention, an account of the invention, brief, yet

sufficiently full to supply him with a view of the whole principle and general effect of the Respirator, and thereby save him the trouble of tracing them out himself when an opinion is required of him. The reader has before him the chief indications, in the eight I have enumerated, and also the path through which I was led to become impressed with the importance of them.

Having no idea, for a considerable time, of turning animal heat to account, I felt that I had in vain sought out so great an extent of need, since I had no way of supplying it. I therefore confined my attention for the time to the atmospheric treatment of all the surfaces, the skin and the lungs, by carrying into effect measures I had formerly been led to contrive for giving a right temperament to the atmosphere of dwellings. At this juncture the case of a relation, labouring under pulmonary disease of a fatal amount, renewed in my mind the importance of all those indications pointing to exercise and fresh air out of doors, and a disencumbering of the skin.

In the case of this sufferer, confinement in-doors, from its effect upon other labouring organs and the health generally, exceeded in injury even an exposure to the severest atmosphere out of doors; although the invariable consequence of this was an amount of distress painful to witness, and precipitating the fatal termination of the disease.

Some portable source of warmth and moisture was loudly called for; nor were means for removing, if possible, the smoke and dust of London air to be overlooked; for they actually blacken the sputa coughed up after any considerable exposure.

As may be supposed, the idea of a lamp first suggested itself; but the awkwardness and weight of any such apparatus, especially of a chimney necessary for conducting above the head the noxious products of the combustion, and of additional apparatus for giving moisture to the fresh air for respiration, warmed exterior to the case of the lamp, together with other reasons, caused me at once to reject so cumbrous and troublesome a plan. I have referred to it, because an attempt recently made to introduce an apparatus, in which a lamp is employed, but in a very deleterious manner, has, it is

affirmed, received some professional countenance. Such can only have been given hastily, since the air is poisoned with the products of combustion, and rendered injuriously arid: these, with the general character of the proposal, would have otherwise rendered it unworthy of notice.

I was next led to seek warmth from the body itself; but from the outer surface. A little calculation, however, made it evident that the skin could not at all endure such an abstraction of heat from it, since the natural extrication through thick clothing even, keeps it in so chilly a state as to compel many to burden themselves with coverings, and thus to give rise to the seventh indication.

I now gave up the pursuit until on one occasion, while leading my invalid relation out for exercise, it occurred to me as obvious, that the very chilling of the respiratory passages by cold air was no other than the removal by the air of a quantity of warmth, which, had it been presented to the air previously, would have rendered it abundantly warm; nay, even more warm than enough; so that in each act of respiration, if the air could acquire the warmth one stage earlier, before it touched the pulmonary surfaces instead of afterwards, the object, as to warming it, would be gained. The subject then placed itself in another light; namely, that the heat developed by such invalids was evidently insufficient to meet all the demands from without upon the system. Hence the distress occasioned by that constant abstraction of heat, of which every outgoing breath was robbing the lungs.

The question then arose whether it might not be possible to recover this heat, without any detention of the impure gaseous matter of the breath. If practicable, it was obvious that it must be effected by that movement of heat named conduction; and if by conduction, then manifestly through the instrumentality of metal. But it was doubtful if even the best conducting metal could be made to catch the warmth with the rapidity necessary in so momentary an act—"in a breath." Hence, it appears surprising how any persons rightly informed in the properties of different kinds of matter in relation to heat, and having the right material already before them, should



imagine that any other material than metal would answer the purpose.

Upon commencing to reduce the idea of employing metallic conduction to some practical form, I first thought of letting the warm breath pass out through a number of small tubes, or spaces, formed by metal, which should conduct warmth to cold air entering spaces, around the tubes. Apart from the great inconvenience of its length and bulk, a little further reflection made it obvious that it would be defective altogether in principle. It might answer if inspiration and expiration were performed simultaneously, the one forming a continuous counter-current with the other; but it was wholly unsuited to the actual case of respiration, in which the movement of the currents is alternate. I think it right to mention this defective plan, since it has more than once been proposed as an improvement.

In any case of continuous counter-currents, the conducting metal has to perform the duty only of a road for the travelling of the heat across from the one current to the other; but in the case in question a metallic storehouse was evidently wanted, into which the warmth might be safely and quickly deposited by the outgoing current, there to lie until taken up by the fresh entering current.

It was next plain that, in order to conduct off the warmth with the necessary rapidity from every portion of the gaseous current, it would have to be acted upon by metallic contact in every part; for which purpose the breath must be subdivided, or split into the greatest number of currents. This might be effected by a multitude of thin short plates of metal. A A, &c. fig. 1, sets parallel to each other, and

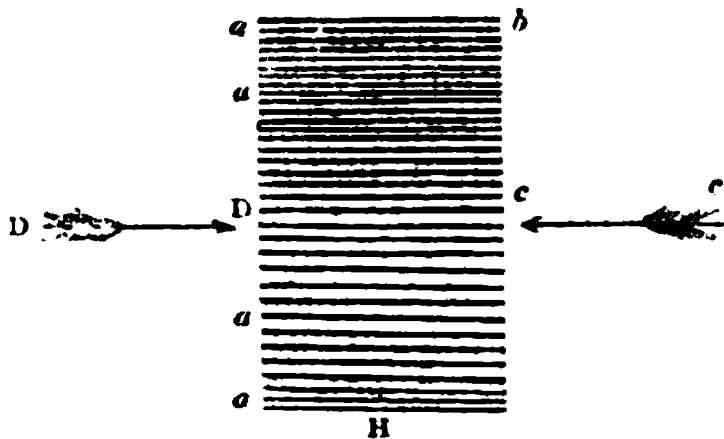


FIG. I.

edgeways to the current C C, or D D, the plains of these plates lying in the direction of the current. These plates

would receive warmth from the outgoing current—say D D. They would, if properly encased in some non-conducting material, store it up to be received by the entering cold current C C, and thus a respirator would be formed. This was the first idea I formed of a kind at all proper. It is curious that this also has been proposed to me as a superior modification of the Respirator. Though incomparably better than the other, its action would be very imperfect, as the reader will readily perceive. Since there is a continuity of metal in every plate, all the way from A to B, it is plain that the point A, next the mouth, could never be materially warmer than the outer point B; for any excess of warmth would rush from the former to the latter. Whatever were the relative capacities for heat of the metal, and the breath, with such a construction, the one could only give half of its warmth to the other. Thus when the inner half of each plate towards A had taken up all the warmth it could from the outgoing currents, the outer half towards B would get no more from it; for the metallic continuity would ensure its being nearly at the same temperature with the inner. The process would be confined to one step of conduction; a deep one indeed, but a single step only. If, then, the capacities of the metal and breath were the same, but one half of the warmth could be taken by the metal, supposing the conduction absolutely perfect, which of course is far from the case with any metal; or any means we have of applying it. Again, the entering cold current could only receive, according to the utmost which theory would give, one half of the warmth stored up in the metal, that is, one half of one half, or a quarter of the warmth which the breath had brought from the lungs. After a long repetition of the process, the quantity would verge nearer to one half of the whole warmth, for a reason which I will not consume space in explaining; but it could never amount to it, and in practice it would be much less.

Hence the necessity of a further insight into the question before we arrive at that perfection short of which no philosophic mind will be contented to rest. The reader will by this time have anticipated the necessity of more than



one step or stage of conduction. The warm breath, after one set of metallic conductors has taken from it all the warmth it can, must be presented to the action of another set of a lower temperature; for if it were of the same, it could, of course, take no heat from the breath. But even two conducting layers do not suffice. In practice from six to twelve, or fourteen, are required, according to the temperature we desire to give to the incoming air; and for certain reasons it is desirable that each layer should be double, the total number of layers being twice the above. Again, a little space is required between each double layer, amounting to the fortieth of an inch; and as the whole are to be compressed into about a quarter of an inch, each layer must occupy the smallest possible space. Now referring to the above diagram, it will be evident that if we divide the plates A, A, &c. (which are almost geometrical planes, having length and breadth without

thickness), to a great extent crossways, we shall convert them into lines, which have length with scarcely any breadth or thickness; in short, into extremely fine wires. It was thus that I was led to the selection of wire, since one principle required extreme subdivision from front to back, while another demanded the same from side to side. The two, therefore, reduced the conducting material to merely upright lines.

To support such fine wires, and keep them in a state of tension, I employed delicate frames of metal, like that of a window. They had to be made in a peculiar manner, and to every horizontal bar the wires were soldered: each frame carrying two surfaces of wire. The frames are kept apart by small studs, which, touching them only in a few points, and being of a material which conducts heat badly, have no effect in disturbing the independent temperature of each layer. This arrangement is seen in fig. 2, which re-

44°  
48°  
52°  
56°  
60°  
64°  
68°  
72°  
76°  
80°

presents a Respirator with the investing leather removed where it covers the metal work. A A are wired frames, and B B the intervening studs. The gradative action of the instrument will at once appear on an inspection of the columns of figures on either side. That on the left hand represents the temperature of the several layers, just after an act of expiration has warmed them.

The innermost one has been raised to 80° by the breath, which, reduced by this loss of heat nearly to that temperature, could give no more warmth to it. But the next layer was cooler, and could receive warmth, until, rising to 76°, it again could gain no more from the air. In the same way the third, and all the successive layers, were quali-

fied by their progressively lower temperatures to draw warmth from the air, in their turn, after each preceding layer ceased to act, until the air upon its escape was reduced below 50°, having raised the outer plate to 44°.

The right hand column serves to represent the progressive rise of the entering air from the freezing point, until it reaches in this a *medium* respirator, the temperature of 68°—a grade far above that of the outer layers, which had given it when cold, the first stages, or as it were the foundation, of its now accumulated warmth. In the respirator of *highest* power, the entering current can thus be brought up in a moment from the freezing point to the usual summer heat of Bengal. Such is

the importance of this gradative principle for giving effect to the *storehouse* or *depositive* conduction, required to suit the *alternate movement* of the currents in respiration.

[To be continued.]

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OBSERVATIONS  
ON THE  
STATISTICS OF PHTHISIS,  
AND ON THE INFLUENCE OF CLIMATE AND  
OCCUPATION IN THE PRODUCTION OF  
THAT DISEASE.\*

"La médecine ne serait ni une science ni un art, si elle n'était pas fondée sur de nombreuses observations"—*Poisson, Recherches sur la probabilité des jugemens.*

[Continued from p. 178.]

THAT any disease of the respiratory organs must be affected by the nature of the climate enjoyed by the patient, is a supposition so natural and obvious, that we find it supported by the authority and practice of the earliest writers on the theory of medicine.

Neither are theories and hypotheses on this point wanted at the present day; nor is the importance of the subject less felt by modern practitioners in our own times. Indeed, the contrary is the case, and many efforts have of late years been made to solve the problem of the effect of climate on pulmonary diseases; but, whilst the mass of observations is so small as it yet is, and the observations themselves are recorded with so little exactness and precision as they for the most are, but few exact and general conclusions of importance can be drawn from them. Still we may make a first approximation to the truth, and by the help of numerical statements give some degree of exactness to theories which, from the vagueness and indeterminate meaning of the terms employed in the relation of the facts on which they are founded, are otherwise necessarily doubtful.

To obtain a tolerable notion of the nature and extent of the influence which may possibly be exerted by climate in producing or increasing a tendency to disease of the respiratory organs, we must pay attention to the functions which the lungs have to perform, and then consider the effect which any change or variation, either of the at-

mosphere or of climate, properly so called, which is met with in this or other countries, can have in assisting or hindering the lungs in the performance of these functions.

Wherever numerical statements are at our command, we shall of course avail ourselves of them; but, unfortunately, we must sometimes content ourselves with merely the statements of various writers as to the freedom from, or frequency of, phthisis in particular places. On assertions like these, unless founded on great experience, too much reliance must not be placed; for, as has been well observed by Gavanet, "the *sometimes* of the cautious is the *often* of the sanguine, the *always* of the empiric, and the *never* of the sceptic; but the numbers 1, 10, 100, 1000, have but one meaning for all mankind."

The difference in the climate of two different places must be included under some or all of the following heads:—the chemical constitution of the atmosphere, the mean pressure and temperature of the air, and its hygrometric state. There is also to be taken into account the extent of the variations from the mean temperature and pressure common at each place, the rapidity with which these changes are effected, and the frequency of their occurrence.

The chemical composition of the atmosphere is so constant and uniform, that it is not probable that any variation in the proportion of the constituents of air is sufficiently great to produce or affect disease of the lungs: in certain cases, of course, the lungs are affected by the injurious exhalations or vapours produced in various operations in manufactories; but this belongs to a different head of our subject—that of occupation rather than climate; and it does not appear that the difference (if any there be) in the chemical constitution of the atmosphere, at different places in this and most other countries, has any great effect on the frequency or fatality of phthisis.

The introduction of extraneous substances into the lungs is an evil to which in general only particular classes of operatives are exposed; and the only circumstance of this nature which affects all classes equally, is the inhalation of dust. I may possibly have occasion hereafter to illustrate the destructive effects of inhaling any solid substances, as exemplified in the health of the workmen

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\* Communicated by the author.

employed in various manufactures, but I shall now merely refer my readers to the treatise of Thackrah, and an interesting report by Villermé, published in the *Annales d'Hygiène*, on the health of persons engaged in the cotton manufacture. The operation of beating cotton, from the great dust raised in the process, increases, according to both of these authors, the mortality from phthisis; and it is not probable that the irritating and angular particles of dust are less injurious to the lungs.

Dr. Hennen, in his very valuable and interesting posthumous work\*, has some remarks in connection with this subject in that part of his book relating to the climate of Malta, and the sanatory state of the troops stationed in that island.

The climate of Malta† is dry, and the temperature neither very variable nor low: from December till February the rain falls with tropical violence; but from that period till August not a drop falls, and the sky is generally cloudless. The island itself (appears, from its geological formation, there being neither rivers, lakes, bogs, nor morasses in it), to be favourable to health, and yet the mortality from phthisis, though inferior to the mortality from that disease occurring in England, is nevertheless much higher than might have been anticipated. Hennen affirms that the disease is very common; and according to Major Tulloch, the ratio in each 1000 troops attacked annually by phthisis is—

In the United Kingdom . . . 6.6

In Malta . . . . . 6.4

Amongst the civil and native population of Malta, the deaths from consumption, from the year 1822 to 1831 inclusive, amounted to 4149, the average population during this period being 100,270, and the aggregate population 1,303,517. In the table below is given, in the first column, the number of deaths from consumption in each year among the civil and native population of the island; in the third, the calculated amount of the population at each period; and in the fourth, the number of deaths annually from phthisis in each 100 persons living. We may

\* The Medical Topography of the Mediterranean, p. 446.

† In 1823, hygrometer 87 max., 30 min., and 58½ med.; and the temperature during six years was 90 max., 46 min., and 63 med.—Hennen, p. 431.

premise, that the number of deaths assigned to phthisis is most probably rather above than below the truth:—

*From Phthisis and Consumption.*

Deaths.	Year.	Estimated population.	Deaths per cent.
298	1822	95,484	·312
267	1823	96,943	·278
206	1824	96,404	·214
244	1825	97,627	·249
245	1826	98,739	·248
286	1827	99,549	·287
311	1828	100,949	·308
297	1829	101,776	·292
393	1830	101,962	·385
375	1831	102,839	·363
331	1832	104,263	·317
509	1833	104,056	·489
387	1834	103,926	·372
			Mean .316

In 1833, it will be seen from the above table, that the mortality from the disease was much above the average, being double the amount in the earlier years. The weather in the early part of that year was such as is usually experienced; but in the latter part of the year it was much more variable than usual; dry and moist, warm and cold weather, following in rapid succession, with occasional heavy rains\*.

Hennen attributes, and it appears to me with considerable justice, a large amount of the deaths from pulmonary diseases to the extreme dustiness of the climate, and the consequent introduction of irritating particles into the lungs.

His description† of the climate of Malta in this respect is very striking. "From the action of the winds," he says, "and the dryness of the atmosphere, taken in connection with the nature of the soil, there results a phenomenon which affects the climate of Malta in a manner strikingly cognizable to the senses, and which I am convinced is productive of considerable influence on some of our diseases. I allude to the volumes of impalpable dust which float about in the atmosphere, especially in summer and autumn. Every wind which blows over the exsiccated surface of the island takes up this dust, which is so fine, so light, and so pene-

\* Tulloch: Reports on the Sickness and Invaliding of Troops in Malta.

† Ibid. p. 446.

trating, that the closest door does not offer an effectual barrier to its entrance; the eyes and face are clogged up with it; it is forced through the clothes, and all parts of the skin are covered with it; and so subtle is its nature, that it occasionally finds its way into the works of the best cased-watch, even in the pocket. When a damp wind blows, or when the dews and fogs are heavy, this floating dust is moistened, its particles coalesce, and it is precipitated in the form of drops of a very fine mud. We frequently see the plants in a morning covered with this precipitate."

The influence of dust in increasing the frequency of pulmonary diseases, is also well illustrated by the observations made by Bremner in his account of Odessa\*.

Setting aside, then, the consideration of the changes which sometimes possibly occur in the chemical constitution of the atmosphere, and which we may afterwards notice when discussing the climate of, and mortality in, cities as compared with that of the country, and the effect of particular occupations on the health of the artizans engaged in them, there remains to be noticed only the effects which the variations in temperature, dryness, and pressure of the atmosphere, have in increasing the frequency of diseases of the lungs.

That the density and pressure of the atmosphere must have some considerable influence on the lungs can scarcely be doubted; for, the cavity of the chest always remaining the same, the greater the density of the air the greater will be the weight of the air introduced into the lungs at each respiration, and the system consuming the same weight of oxygen, the fewer will be the number of inspirations and expirations in a given time: but the point to which I shall now principally direct the attention of my readers is that of the influence of moisture; and this I shall do principally because there are no sufficient data respecting any connexion between the frequency of phthisis and the pressure of the atmosphere, and on this account it will be useless to enter on the subject.

So far as is known on the subject, the purpose of respiration appears to be the removal of the carbonic acid contained in the venous blood, and the

absorption of a somewhat greater volume of oxygen from the air, and, in addition, either the absorption or exhalation of nitrogen, this gas being sometimes absorbed from the atmosphere, and sometimes exhaled from the blood. These are the principal chemical changes effected in respiration which press themselves more immediately on our notice; but there is another office of the lungs to the due performance of which I am disposed to attach the highest importance, but which is, in general, comparatively disregarded—I mean the exhalation of the aqueous vapour or steam from the blood during its passage through the lungs. Considering this exhalation of the vapour of water only as the means of removing an unnecessary or injurious quantity of water from the blood, the continuance of such a function must be, considering the large quantity that is thus thrown off, of a high degree of importance; but when we consider the great loss of heat which the blood must undergo in converting that portion of water which is separated from it into steam, the separation of this portion of water from the blood appears in a still more important light.

Our illustrious countryman, Dalton, has shown\* that in one particular individual, taking daily into his stomach 53 ounces of fluid, the whole evaporation from the lungs and skin together amounted to 27½ oz. in the 24 hours, of which quantity only 6½ oz. were given off from the skin, the remaining 20½ oz. or 1·275 pounds, avoirdupois, being thrown off from the lungs. To form a more distinct idea of the amount of heat required to throw off this quantity of water from the human lungs, let us assume the latent heat of steam to be, as was proved by the experiments of the celebrated Watt, about 950°; then the quantity of heat required to convert the above weight of water into steam would be sufficient to raise the temperature of nearly eight pounds of water from the freezing to the boiling point. It is thus evident that an immense quantity of heat is drawn from the blood and the system generally by the continual evaporation going on in the lungs.

But, important as the perfect exercise of the lungs would, even on this account alone, appear to be, it is pro-

\* Excursions in Russia, vol. ii. p. 474.

\* Trans. Phil. Soc. Manchester, vol. v. p. 315.

bable that, if viewed simply in this manner, we should greatly underrate the importance of this phenomenon in the economy of human life. A distinguished living chemist and physiologist\* assigns a highly important office to the process of evaporation from the lungs, conceiving that by means of this evaporation an important chemical change is effected. "With respect," he says, "to the aqueous vapour thrown off from the lungs, we have every reason to believe that much of this vapour is derived from the chyle in its passage through the lungs; and that by such separation of water the weak and delicate albumen of the chyle is converted into the strong and perfect albumen of the blood." Thus, considering the matter *à priori*, and without reference to any known facts on the subject, there scarcely can be a doubt that the continuance of this evaporation from the lungs, or indeed the extent to which it takes place, is a point which is of the highest importance to the healthy condition of the human frame, and that the due performance of this process, and the prevention or partial suspension of it by peculiarities of climate or other external circumstances, must exercise an important influence, either for good or for evil, on the healthy condition of the lungs, as being the organs immediately affected by the continuance or suspension of this function.

Now this office of the lungs will, of course, be affected both by the temperature and pressure of the atmosphere, as also, and principally, by the quantity of moisture present at the time in the air; the pressure of the atmosphere diminishing only the rate at which the water can be evaporated. The quantity of moisture which can be thrown off from the lungs will vary accordingly, and be proportional to the temperature of the blood in the lungs, and the difference between the elastic force of vapour at that temperature, and the elastic force of the vapour already existing in the atmosphere. Suppose, for example, a climate possessing an ordinary temperature of  $100^{\circ}$ , and the atmosphere of such place to be also saturated with moisture; then, as the temperature of the body is wholly uninfluenced by the temperature of the atmosphere, and is precisely the same

at the equator as it is at the poles, the blood, supposing it to be of no higher a temperature than  $100^{\circ}$ , would be unable to throw off any of the water which, in a less humid climate, would be evaporated from the lungs. Hence, if we may be allowed to suppose that the discontinuance of the evaporation from the blood is one of the causes which tend to induce phthisis—and there certainly appears to me some degree of probability that such is the case, as the facts which I shall presently bring before my readers will, I think, show—we might expect that in tropical countries, enjoying a very high temperature, and where the atmosphere is nearly saturated with moisture, there phthisis would be found to be very prevalent: in some countries situated near the equator, at least in the West Indies, this appears to be the case, as is demonstrated by Major Tulloch's Reports on the Medical Statistics of the British Army, and to which reports I shall presently have occasion to refer more particularly.

We all know, from experience, the disagreeable, and sometimes even distressing, feeling, caused, as I believe, by the partial suspension of this office of the lungs in wet and warm weather, and which we term closeness; and we cannot but suppose that the entire, or nearly entire, suppression of the steam usually thrown off from the lungs, must be, in some manner or another, highly pernicious to the system.

As to the influence of a moist climate on phthisis, it has been generally considered as rather prophylactic against that disease than injurious; and this opinion is one which has been entertained by writers of the greatest talent and the highest authority. Thus M. Lombard\*, who has attempted to represent, numerically, the influence of various circumstances in increasing or checking the predisposition to phthisis, places the preservative influence of exposure to aqueous vapour at 0.053, whilst he considers the injurious effect of dry air in increasing the tendency to phthisis, as represented by 0.127. Many earlier writers who held this opinion might be quoted; and this hypothesis is also supported by one of the most modern, and certainly the highest au-

\* Prout, Bridgewater Treatise, p. 530.

\* See Quetelet *sur l'Homme*, where an analysis of Lombard's paper is given.



thority on the subject—I mean M. Louis.

To attack an opinion thus supported by the concurrent testimony of almost every medical writer for a long period, including those of the highest eminence, and the most distinguished for their philosophical views, certainly requires no little hardihood; but I think the many facts, accurately stated, and which may be firmly relied on, that may now be found in the elaborate reports of the Registrar-General and Major Tulloch, are sufficient to show that this opinion requires reviewing before we can accede to its general truth: and though neither my time nor space will allow me to investigate these and other documents so closely as I could wish, yet I think some of the facts which I shall draw from them will tend, so far as they go, to prove that the old and favourite rule, that a mild, equable, and moist climate, is always the least favourable to the development of phthisis, is not in every case correct.

But before discussing the question of the effect of humidity of climate on the frequency of phthisis, it will be desirable to state the following proposition, and to illustrate it by some examples. The preliminary proposition that we wish to establish is the following:—The effect of variability of climate as to temperature, and the extremes of heat and cold to which any country is subject, have no perceptible influence in increasing the amount of mortality from phthisis. This, again, is an opinion in direct opposition to that of most authorities on this subject. Young\*, for example, affirms that “in those climates which are constantly very hot or very cold, the disease, in its genuine form, is but little known.” This assertion, I admit, certainly does hold good in some cases; but I think that this arises from a very different reason than the mere uniformity of temperature to which the human body is subjected; and certainly the assertion of Young is far from holding good generally. As an example, however, of the occasional truth of his remark, we shall now say a few words on the climate of, and prevalence of phthisis in, Egypt.

[To be continued.]

\* Treatise on Consumption, by T. Young, M.D. page 41.

## MEDICAL GAZETTE.

Friday, May 13, 1842.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicam sit, dicendi periculum non recuso.”

CICERO.

### THE ANATOMY BILL.

THE legislative regulations with regard to anatomical schools, have again been brought under our consideration, in a petition presented to the House of Lords, the other evening, by Earl Stanhope, having for its author Mr. Roberts, and for its burden, complaints against the conduct of the Commissioners appointed to inquire into the working of the Anatomy Act.

It must be confessed on all hands, that by directing the attention of the public to the details of this Act, and making so prominent a display of its deficiencies, those feelings of antipathy to post-mortem examinations, which, existing in some degree in the minds of most persons, are in many sufficiently strong to overcome the better dictates of reason and education, are excited—the prejudices against dissecting-rooms are strengthened—and the difficulties in the way of obtaining a sufficient supply of bodies are increased. Indeed, so little benefit is likely to be the result of public investigation into this system, and so much disadvantage is liable to follow from it, that nothing but an urgent necessity can justify any one in making it the topic of parliamentary discussion. What, then, are we to say to the interference of Mr. Roberts on the present occasion,—an interference not only unnecessary but actually injurious, directly tending, as it undoubtedly does, still further to embarrass the present scheme of obtaining bodies for dissection? Earl Stanhope mentions him as a gentleman, whose discoveries with reference to a mode of preserving bodies from decomposition had been of the

greatest advantage to anatomical science, and therefore appears to consider a petition coming from him as one peculiarly deserving of attention. But on the contrary, we are not aware that any advantage whatever has been the result of this discovery, so loudly and extensively lauded by its author. We have before shewn, that these plans of arresting putrefaction are not applicable to the ordinary purposes of anatomical investigation in the schools; and perhaps no better evidence of the inutility of this one in particular, as well as of the real desire which Mr. Roberts feels to promote the advancement of anatomical science, can be found, than that which is to be derived from a consideration of the means he has adopted to obtain notoriety, and bring about its more general employment. The first obstacle to this, being of course, a regular and sufficient supply of fresh subjects, his great endeavour is to interfere in every possible manner with the efficient working of the Anatomy Bill. On this principle alone can we explain the fact that, not content with various other proceedings to which we have formerly alluded, he every now and then attempts to provoke the indignation of the public, by petitions to Parliament against the grievances and abuses of the Anatomy Act. Screening the real object of bringing his own "discovery" into use, he comes forward as the exposé of the "Helpless Condition of the Workhouse Pauper." We have already on previous occasions adverted to the mischievous interference of this person, and regret that we should again have such reason to express our disapprobation of his measures; but they are so evidently injurious to that which he professes to be his great object—namely, the promotion of anatomical knowledge, that we cannot refrain from expressing our strong opinion of them. We do not profess to

esteem the Anatomy Act as perfect, or to uphold Dr. Somerville in all his proceedings; on the contrary, we have often pointed out the defects of the one, and exposed the negligences of the other. At the same time, we do think that this act, if properly carried out, is calculated in great measure to effect its object; and we must also acknowledge with pleasure that greater diligence has of late been evinced by those gentlemen whose duty it is to superintend its operation: in consequence of which increased energy, its benefits have been more conspicuous, and during the last two seasons the dissecting-rooms in the metropolis have been better supplied than they previously were. In the last winter, it is true, there has been some falling off, as compared with the preceding, but this may be attributed to accidental circumstances, which it is not in the power of the Inspector to control.

One of the complaints urged by Mr. Roberts in his petition is, "that the dissected bodies are not granted the proper rites of burial in consecrated ground; by which omission that clause of the Act has been violated which provides, 'that after a body has undergone dissection, it shall be decently interred in consecrated ground, and that a certificate of the interment shall be transmitted to the Inspector of the district, within six weeks after the day on which such body was received by the Professor of Anatomy.' The cause of Religion has been insulted, the best and strongest feelings of the poor have been outraged, and ecclesiastical law has been contravened." In the excellence of this provision of the Act we most willingly agree. Even if we exclude the claims of morality and religion, it is beneficial, inasmuch as, by securing the decent interment of subjects, it removes one ground of objection, existing in the minds of many persons, against the

dissecting rooms, and thereby facilitates the means of supplying them. But we are by no means prepared to admit, with Mr. Roberts, that the provision is violated in the manner stated by him. The two principal sources from which the subjects in the metropolis are obtained are, the large hospitals and the workhouses. The bodies derived from the former, having undergone dissection, are interred in the burial ground connected with the hospital; while those received from the workhouses, which form the greater number, are returned to those houses, and obtain the rites of burial in common with the undissected bodies interred at the parish cost. All are buried in consecrated ground, and with the same funeral rites. If, therefore, any complaints are to be raised against the place and manner in which these ceremonies are performed, they must be made against the *whole* system as carried on under parish authorities. It is evidently neither fair nor just to level the charge against the anatomical inspectors, or to make the present system of burial the ground for loading scandal upon the schools of anatomy, and exciting the dread of the poor. To suppose that every portion of a body, divided into so many fragments as one that has undergone anatomical examination must necessarily be, can be recollected exactly and accurately, would be absurd: we may, however, state on good grounds that, as far as possible, the whole is returned for interment. We should be led to a different opinion, and imagine that a great taste for anatomical putrescence exists in our schools, from the statement of Mr. Roberts, in which he affirms, that he has seen many hundred weights of human flesh thrown into heaps, and allowed to rot. He does not inform us in what part of the United Kingdom this exhibition may be witnessed, the bare relation of it being deemed by him

sufficient to excite the sympathies of the credulous, and increase the disgust too often felt at the mention of the subject.

The petitioner further states, that from his own observation, he has found the anticipation of dissection to be a source of deep anxiety and grief to a large number of the workhouse-poor. In reference to this, we would ask, who have been the means of spreading abroad the fancied horrors of dissection? and who have most contributed to excite this alarm and anxiety in the minds of the paupers? Surely those who are perpetually representing anatomical investigation to them in its most formidable colours, and, under a pretended zeal for humanity, torment the living with apprehensions respecting the fate of their bodies after death, must bear the onus of this charge. It is well known that Mr. Roberts has laboured hard to terrify the poor—to excite in them horror at the very name of an anatomical school; in fact, to foster those very feelings which he now urges as an argument against the present system.

We not unfrequently hear mention of the “helplessness of the poor,” and the “inability of the friendless pauper to avoid post-mortem examinations;” and they are adduced as hardships in the petition before us; being brought forward in such a manner as to induce persons unacquainted with the subject to imagine that some compulsory measures are had recourse to, and that bodies are removed for anatomical purposes without the consent of relations, or the previously-expressed wish of the party himself—a conclusion most unjust, and in direct opposition to the truth; the fact being, that the poor have the power to preserve themselves, or their relatives, from dissection, by simply expressing an objection to it. It is well known that the only

subjects of examination are the bodies of those persons whose friends make no opposition to this appropriation of them; and also those which remain for a certain length of time after death, unclaimed by any relatives. Could a better provision than this have been made? The common dictates of humanity are obeyed, and the feelings of the poor are respected. Why, then, is it exclaimed against? why is the clamour raised that the pauper is unable to protect himself? The reason will best be found in the interested motives of those who urge these unfounded complaints.

That the Anatomical Bill may produce the good effects which it proposes, and which are expected of it—that is to say, a diminution of the antipathy to dissection, and also the more abundant supply of subjects—it is essential that it be allowed to work on in quietude. The public excitement upon such a question can only do harm; and we esteem it one of the excellencies of the administration, with regard to it, that the minor alterations which have been required, have, from time to time, been effected by the direction of the Secretary of State, without making a prominent and useless display of each. We cannot but suspect that it is these considerations which induce Mr. Roberts to bring the subject forward for discussion in Parliament, it would be useless to expect him to remain quiet while interest moves him in the opposite direction. We would, however, urge upon others, who may have less concern in its publicity, the necessity of discountenancing the needless appeals made upon this question, and hope that the management of the dissecting-rooms may be left in the hands of those persons, who, being practically conversant with the best means of providing for them, are most likely to avoid mistakes, and ensure the benefit of the community. The subject itself, combining in

its nature much that is loathsome and disgusting in the eyes of the world, is capable of being placed in a still more prejudicial light by the exaggerated assertions of any one who chooses to make this his endeavour. There are very few persons, even of those occupying high stations in society, and possessed of good education, who can resist these prejudices altogether, and who can therefore be expected to form an unbiassed opinion upon the subject, when thus presented to their notice, and painted in its darkest colours. For this reason, if for no other, it is to be wished that those who are not fully conversant with its bearings would turn a deaf ear to the rumours which interested persons are constantly spreading abroad.

#### BUST OF SIR ASTLEY COOPER.

THIS work has been raised to the memory of this distinguished surgeon by his pupils, at a cost of 400 guineas, and was placed in the Anatomical Theatre on Saturday, May 7, on the occasion of the annual distribution of prizes. The bust is by Mr. Towne; and it was much admired both as a work of art, and also on account of its being an excellent likeness of the eminent man to whose memory it is raised. It is mounted on a pedestal of white marble, five feet in height, and embellished with a fine bas relief, and has the following inscription:—

“Astley Paston Cooper. Alumni grato animo hoc marmor posuere. 1841.”

#### SPECIAL REPORT

OF THE

#### COMMITTEE APPOINTED BY THE PROVINCIAL MEDICAL AND SUR- GICAL ASSOCIATION,

*To watch the further progress of the Question of Poor-law Medical Relief, and to suggest to Council, from time to time, such measures as may appear to them necessary to meet circumstances as they arise.*

Dated the 30th of April, 1842.

YOUR Committee, at the request of the central council, have perused and carefully considered the *General Medical Regulations*, and the *explanatory circular* to the Boards

of Guardians, recently issued by the Poor-law commissioners, and recommended to the medical profession by the President of the Royal College of Surgeons.

In submitting to the council the result of their examination of these documents, your Committee would express their satisfaction at perceiving that the strenuous efforts of the medical associations to obtain an amended administration of medical relief for the poor (efforts persevered in under very discouraging circumstances), have at length proved not altogether fruitless.

These exertions may have been censured by some as factions, and by others considered unnecessary or useless; but the beneficial results, at present only partially manifest, will silence numerous objectors, and should encourage the association to a judicious continuance of well-directed endeavours to secure a complete and decisive reformation of the system.

The several improvements directed by the Poor-law commissioners are arranged in the following order.

First, "Tenders for Medical Attendance" (Articles 1 and 2).

Your Committee congratulate the association, and the profession at large, on the abolition of that most obnoxious form of "tender" in which the medical candidate names the sum for which he is ready to undertake the office. It is, however, a matter for unqualified regret that the commissioners still leave the guardians at liberty to fix the price of medical duties without reference to any fixed scale or acknowledged principle of computation.

Secondly, "The Qualification of Medical Officers" (Articles 3, 4, and 5).

Your Committee observe that qualifications in both medicine and surgery will, for the future, be required of candidates for Union appointments. The profession have long contended for the adoption of a similar measure; but the value of the present regulation is much impaired by its exclusiveness, and its obvious tendency to confer an undue advantage on the London College of Surgeons.

Your Committee, however, feel the less anxiety on this point, as it appears more than probable that the measure of medical reform, promised by Government, will satisfactorily adjust the qualification of all medical men in public employment; and thus, in effect, set aside the Commissioner's propositions.

Thirdly, The regulations relative to the maximum area and population of medical districts (Articles 6, 7, 8, and 9) are, in their present state, open to objection; yet their introduction confirms the correctness of the assertion so repeatedly made by your Committee (and more than once denied by

the commissioners\*), that *it is both possible and expedient to establish, by direct enactment*, maximum limits to the population, if not to the area, of medical districts.

The limiting of population to 15,000 in large towns, is a decided improvement upon existing arrangements; but throughout the country, and in the great majority of Unions, this limit will be attended with but little advantage.

Again, the limiting of the area to 15,000 acres will by no means adequately reduce the extent of districts in populous localities, whilst it will be found impracticable, not only in Wales, where the Commissioners do not propose to enforce the rule, but also in several English Unions where the population is widely scattered.

Your Committee have founded all their recommendations on this principle,—that in proportion as the population of the locality is more scattered, so the number of inhabitants included in a medical district should be less. Such a proposition, which avoids the difficulty of fixing a positive limit to the area of thinly populated districts, was embodied in Mr. Serjeant Talfourd's clauses, and has been universally approved of by the profession. Had it been adopted by the Commissioners, it would probably have been unnecessary to provide for any exceptions to the rule. From extended inquiries, your Committee are assured that 4,000, in any part of England and Wales, might be provided with a duly qualified district surgeon, residing within an accessible distance.

Fourthly, Articles 10, 11, 12, and 13, fixing the remuneration for certain operations, accidents, midwifery cases, form another concession to the just demands of the profession: nevertheless, it will be found frequently very difficult to carry into execution the unreasonable provision for a consultation *at the cost of the medical officer*, except in those instances where there is a partner or qualified assistant, whose gratuitous services he may command.

Fifthly, Articles 14 and 15, providing "*substitutes for medical officers*," appear to your Committee unexceptionable, and if rigidly enforced will effect a marked improvement on existing practices.

Sixthly, "The mode of obtaining relief by permanent paupers" (determined by Articles 16, 17, 18, and 19), is another approximation to the propositions of the medical profession.

As the preparation of medical pauper lists is made imperative on every Board of Guardians, it will obviously lead to a more definite and satisfactory method of calculating the salaries of medical officers.

\* See their Report, December 31st, 1839, p. 45; and 7th annual Report, section 20.



Seventhly, The regulation relating to the "continuance in office of medical officers" (Article 20), is intended to establish an important principle, and is calculated to check some of the abuses of the present system; but your Committee doubt whether medical officers will receive either due protection or just consideration so long as they are amenable solely to non-professional authorities, or while their continuance in office depends on the pleasure of parties who are necessarily incompetent to judge respecting the correct performance of medical duties.

It appears, both from the 20th and previous articles, that the Commissioners still intend to permit the practice of *contracting* for medical services.

Your Committee feel strongly the necessity of abolishing this practice.

The appointment of Union Surgeon need not require the execution of any *contract*; nor can previous custom be admitted as a sufficient reason for compelling members of the medical profession to submit to an indignity which is not required of the clergy in their appointment to the office of *Work-house Chaplain*.

The preceding remarks are intended to show the existence of some serious imperfections in the New Poor-Law Regulations; yet, on the whole, they constitute an amendment of the present system, and contain within themselves the germs of future improvement.

It is worthy of observation, that the period of the year at which the regulations are issued virtually precludes their adoption by the great majority of the Boards of Guardians until March 1843. They are, however, circulated throughout the medical profession before the government bill for amending the new Poor-Law has been submitted to Parliament. The object of the Commissioners' in selecting this particular occasion for the announcement of their amendments can scarcely fail to be rightly understood and properly appreciated. If, in consequence of the promulgation of this "general order," the Poor-Law question should be settled by Parliament without any provision for the regulation of medical relief, it will remain to be seen whether the amendments now directed will be strictly and impartially enforced, or whether the Boards of Guardians will be allowed to postpone their adoption at pleasure, or to take improper advantage of the numerous exceptions and relaxations provided by the "order" itself.

The amount of benefit to be derived from the new code will greatly depend on the vigilance of the profession in general, of the colleges and associations in particular, and especially of the several weekly medical

journals, which have so ably and successfully co-operated in the attainment of an improved administration of medical relief.

The main defect in these regulations is that noticed under the first head, namely, the absence of any specific directions respecting the amount of medical salaries, or the method of computing them.

Whether or not this omission may arise, as has been suggested, from a want of power on the part of the Commissioners to establish a principle, or define certain rates of remuneration, is a question of law, on which it would not become your Committee to pronounce an opinion; but they do not hesitate to state their conviction, that so long as the estimate of medical services is allowed to depend on the varying and arbitrary decision of different Boards of Guardians, the profession should continue to appeal to the legislature for the enactment of certain limits (or at least a minimum limit) to the remuneration of Union medical officers, so that due protection may be afforded to the interests of the rate-payers, of the sick poor, and of the medical profession.

The principle which the Commissioners have uniformly sanctioned, and continue to recommend, is to combine a salary calculated on the number of *regular* paupers, with a payment per case for others, both of which modes of payment are perfectly compatible with the recommendation of the Parliamentary Committee, that medical relief should be a parochial, and not a Union charge.

The Commissioners "remark incidentally that unless a system of payment per case is adopted," the recommendation referred to "cannot be carried into effect."

This remark is likely to lead to a very erroneous conclusion. The fact is, that there are other systems of remuneration equally compatible with separate parochial charges.

It is obvious that an average payment per head for the several paupers on the list (the fixed salary) may as readily be charged to their respective parishes as a payment per case for other poor persons.

To carry into effect the above recommendation of the Parliamentary Committee, and to secure a constant attention to the diminution of medical districts, a point imperfectly provided for by the Commissioners' present regulations, your committee are still of opinion that the remuneration for distance or area should constitute a distinct item in the medical salary; that, in every district, it should be separated from the other (constant) items, namely, medicines and medical attendance within a mile of the surgeon's residence; and that it should be charged only on those pauper tickets or cases of illness, or to those parishes or united hamlets, which may be more than one mile distant from the surgeon's residence.

In the clauses D and E, lately published by the Association\*, and submitted to government, the charge for distance was calculated not on individual cases or paupers, but for entire parishes. The distance was proposed to be measured to the nearest point of the parish; and a charge added for its area. It was also suggested† that if the latter charge were omitted, the mean distance of the inhabitants of a parish, or of united hamlets, should be estimated, or some central point taken instead of the nearest boundary.

Your committee consider it a matter of comparative indifference whether the charge for distance be made on parishes or on individual paupers. The "pauper ticket" for the permanent class, and the "order" for the casual poor, would afford an opportunity to the relieving-officer to name the distance of the patient from the medical officer, and would thus enable the clerk of the Union readily to determine the charge for mileage on account of each parish in the district.

The rates of remuneration‡ should not fall below the minimum rates specified in the clauses D and E before referred to.

Your committee are firmly convinced that if the medical salaries were equitably regulated, and a separate charge at the rate of one-fourth part of the ordinary remuneration added for each mile of the distance between any paupers or parishes and the residence of the district medical officer, the principal de-

\* See "Administration of Medical Relief," pp. 133 and 134. Sherwood and Co., London.

† Ibid. p. 108.

‡ The sums, 2s. 6d. per head, and 6s. 6d. per case, mentioned by the President of the College of Surgeons, if intended as an average, and to include "distance," are decidedly too low (See "Administration of Medical Relief," pp. 70, 107, 108.)

The President seems to prefer a salary calculated on the entire population of the district, varying in ratio merely according to its extent. Were Mr. Guthrie more conversant with the details of the question, he would not have represented the "real objection" to this proposition as "purely theoretical," and "one with which the doctor has no concern." The experience of the last seven years has in truth proved that a salary calculated on the population has no uniform or constant relation to the number of paupers, which differs greatly in different localities. Under Mr. Guthrie's plan, therefore, the amount of medical duty might vary to a considerable extent, without any corresponding variation in medical remuneration—an injustice which may be avoided by adhering to the principle of remuneration sanctioned by the Poor-Law Commissioners.

With respect to midwifery, the President "understands the sum of 20s. to be justly claimed by the surgeon, where the distance from his own house in any ordinary case exceeds two miles." In the absence, however, of any explicit regulation on this head, an attempt should be made to obtain a definite increase of remuneration, proportioned to the distance of each case of midwifery (as of other cases) from the medical officer's residence.

fects in the new regulations could be supplied, and the poor might be properly provided with medical attendance.

To this point, therefore, your committee earnestly request the attention of the Council, believing that a suitable appeal made to the Secretary of State before the passing of the Poor Law Bill might be productive of the most beneficial effects.

It should be observed that the President of the College of Surgeons suggests that the Secretary of State should, if possible, be induced to "empower the Commissioners" to fix the salaries.

This course was recommended by Mr. Serjeant Talfourd\* in 1840; and in case the Government should refuse assent to the enactment of certain limits to medical remuneration in the forthcoming Poor Law Bill, it might be advisable to press for the adoption of Mr. Serjeant Talfourd's and Mr. Guthrie's suggestion, though it appears to your committee even in that case highly important that the principle on which the salaries are to be calculated should be determined by Parliament.

## ADMINISTRATION OF COPAIVA.

COPAIVA is most generally administered by the mouth, but sometimes in the way of clyster. It is often given in too small doses. They ought not to be less than half a drachm; and an entire drachm, given twice or thrice a day, is the most appropriate quantity. As it is a nauseous medicine, on account of the quality, permanence, and adhesiveness of its taste, various devices have been contrived for facilitating its administration. Some take it simply in water, which is stirred briskly so as to collect the copaiva in a globule in the centre. A better plan is to make it into an emulsion. For this purpose each drachm may be triturated with the yolk of one egg, to which are afterwards to be added half an ounce of aromatic, such as peppermint or cinnamon water, and then as much simple water as pleases the patient; or the copaiva may be dissolved in its own volume of spirit of nitrous ether, and then agitated with twice as much mucilage and four times as much water. A favourite method of giving copaiva in recent times is in the form of boluses, made by inclosing the drug in thin capsules of gelatin, which are dissolved in the stomach. This ingenious plan was contrived a few years ago in Paris by M. Mothes, and the process for making the capsules has been kept secret. They may be made in the following manner: the body

\* See "Administration of Medical Relief," p. 131, clause 3.

of the capsule is formed by rounding very smoothly the end of a cylinder of iron or hard wood, four lines in diameter and a few inches in length, dipping half an inch of this end into a saturated alcoholic solution of soap kept warm; then dipping it, when the layer of soap has concentered, into a strong hot solution of gelatin once, or oftener according to the thickness desired; and, lastly, removing the capsule by a screwing motion when the gelatin is quite dry. The top is made in the same way, but shorter and a trifle wider; and when the body is filled and the top slipped over it, they are united by rubbing over the line of junction a camel's-hair brush moistened with hot water (Feder, in Buckner's Repertorium). The form of pill, which, however, is ineligible on account of its insolubility, is best attained by sprinkling one part of calcined magnesia into sixteen parts of copaiva in a flat plate, and letting the compound stand till it thickens sufficiently to be worked into the proper shape. For some time past it has become fashionable in Britain to use what are called specific solutions of copaiva; for which every druggist has his formula, and which have the advantage of presenting the drug in a state of solution, and capable of being diluted without being decomposed. They are commonly made with solution of potash and spirit of nitrous ether, and the following is a convenient formula in use in this city. Boil gently for fifteen minutes two ounces of copaiva with two ounces and a half of aqua potassæ; add, when nearly cool, an ounce of spirit of nitrous ether; and, when the mixture has been at rest for twelve hours, remove the intermediate liquid from the soapy sediment which falls, and the lighter fluid which floats on the surface. In these preparations a part of the volatile oil seems to be separated, and most of the resin deposited in the form of soap. M. Velpeau, not long ago, proposed to administer copaiva in the way of clyster instead of by the mouth. He found it very efficacious when given in divided doses to the extent of an ounce daily in the form of emulsion, to which a little laudanum was added to prevent its too speedy discharge from the gut. Many now prefer the pure volatile oil to any form for administering the crude drug; and though some call in question its superiority, and a few even doubt its efficacy altogether, I am satisfied from observation, as well as many reports from medical friends, that it is at least as effectual as copaiva, efficacious in less doses, and not so apt to occasion sickness. It is best given in emulsion, composed of equal parts of the oil of rectified spirit, peppermint or cinnamon water, and syrup of mucilage. Among the inconveniences attending the use of copaiva, sickness and vomiting are the most frequent. This effect

may sometimes be prevented by multiplying, but diminishing, the doses; by uniting an aromatic water with it, or by directing the patient to chew a piece of cinnamon or nutmeg after each dose. Occasionally a sharp febrile attack is occasioned when the medicine has been taken for some days in gonorrhœa; but as this attack goes off with perspiration in twenty-four or thirty-six hours, and is commonly attended with arrestment of the discharge, it ought not to occasion annoyance, and scarcely requires any treatment. The doses of the preparations of copaivæ are, *Copaivæ*, m. xv. ad fl. scr. iv. *Copaivæ Oleum*, E. m. ad m. xxx.—*Christison's Dispensatory*.

### GALVANIC FORCEPS.

THESE forceps were made by Gorck, the instrument-maker, by order of Dr. Kilian, only to see what might be their effect upon the uterus. The blades are made of copper and zinc, and the metals are properly isolated from the hand of the accoucheur. The first experiment with the galvanic forceps was made upon a woman aged 27, of dry constitution, choleric temperament, and jaundiced complexion. The application of the forceps was decidedly indicated in this case. The head of the child, which was in the first position, remained fixed at the lower aperture of the pelvis; and the torpidity of the uterus was so great, that the child had not moved for two hours and a half; while the infiltration of the scalp was of the size of a man's fist. Before applying the forceps, Dr. Kilian had the patient bled to fourteen ounces; but this had no influence on the action of the uterus. The blades were easily introduced into the uterus; but the moment they were joined, the woman had a fresh pain, which was very violent, without being unbearable. At the same time a movement was felt in the whole uterus, which became as hard as a stone, and lost the morbid sensibility which it had shown before on each examination.

This state of things continued from the beginning to the end of the application of the forceps, and in spite of the hardness of the uterus the pains had no expulsive power. Nothing, however, indicated any spasm of the internal sexual system. After four actions with the forceps, the head cleared the lower aperture of the pelvis, and then (as well as before) the femoral muscles underwent a spasm and trembling of an unprecedented kind. Dr. Kilian then removed his hands from the instrument, to see if the uterus, which was still contracted, would not complete the expulsion of the child's head; but this was not the case, so that he was obliged to continue the use of the forceps.

The infant immediately breathed, which was surprising, when we consider how long it had been fixed in the lower aperture of the pelvis. Hardly were the shoulders free, when the child, which was very strong, began to cry, and the pulsations of the cord immediately ceased. The uterus then contracted, and in five minutes the placenta was in the vagina. There were no pains after delivery, and the lying-in was quite regular.—*Annales de Gand*, and *Gazette des Hôpitaux*.

PORTRAIT OF MR. BRANSBY  
 COOPER.

A VERY striking likeness of this gentleman has been sent to us. The following are the circumstances connected with its execution. The work was undertaken in October 1840, by a Committee of Surgeons' Dressers at Guy's Hospital, six in number. Communications were privately made with various persons, generally medical practitioners, who had pursued their studies under Mr. Cooper; and 200 subscribers, at one guinea each, were soon obtained. The painting was entrusted to Mr. Eddis, of Newman Street, and the engraving to Mr. Simmonds, of Robert Street, Hampstead Road. The former will be placed this year in the Royal Academy. Three hundred copies were struck off prior to the destruction of the plate: of these, 225 have been distributed, and the remaining 75 are now on sale in the hands of the Society for the Relief of Orphans, &c. of Medical Men.

ROYAL COLLEGE OF SURGEONS.  
 LIST OF GENTLEMEN ADMITTED MEMBERS.

Tuesday, April 25, 1842.

W. H. Williams.—H. W. Somerset.—Richard Sissons.—R. G. Lord.—T. Loy.—J. Mellis.—W. Proctor.—J. B. Fife.—J. Pestell.

Friday, April 29, 1842.

F. R. Trumper.—C. W. Jenner.—C. G. Mott.—J. Croft.—W. M. Dowding.—R. Willis.—E. Evans.—T. F. Holrige.—C. T. Wills.—E. Hearne.—G. Everest.

Monday, May 2, 1842.

S. Maltby.—E. Cockey.—C. Pooley.—F. W. Johnson.—H. Y. Chapman.—W. Martindale.—R. Wilson.—L. Buckell.—C. R. Jones.

Friday, May 6, 1842.

F. N. Greene.—H. C. Curtis.—T. Gaskell.—H. W. Watson.—J. Perry.—J. A. Carr.—H. Dixon.—G. F. Whateley.—A. Prater.—T. H. Lowry.—T. B. Trowbridge.—G. Taylor.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
 CERTIFICATES.

Thursday, April 21, 1842.

C. P. Stevens.—A. T. Chandler, Godalming.—W. Batley.—A. C. Fenoulhet, Weymouth.—

H. B. L. Brock, Colchester.—W. T. Boddy, Beaconsfield.—T. Boycott, Exeter.—R. Brown, Burderop, Wiltshire.—R. Dendy, Sussex.—E. Allen, York.—H. D. Fowler, Cheltenham.—J. N. Day, Chudleigh near Exeter, Devon.—R. S. Donnall, Falmouth.—J. Jeffree, Surrey.—T. Inman, Liverpool.—B. Booth, Derbyshire.—R. Gee, Denbigh.

A TABLE OF MORTALITY FOR THE  
 METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, April 30, 1842.

Small Pox .....	4
Measles .....	20
Scarlatina .....	12
Whooping Cough .....	40
Croup .....	9
Thrush .....	5
Diarrhoea .....	2
Dysentery .....	2
Cholera .....	0
Influenza.....	1
Typhus .....	19
Erysipelas .....	6
Syphilis .....	0
Hydrophobia.....	0
Diseases of the Brain, Nerves, and Senses ..	144
Diseases of the Lungs, and other Organs of Respiration.....	260
Diseases of the Heart and Blood-vessels ....	18
Diseases of the Stomach, Liver, and other Organs of Digestion .....	50
Diseases of the Kidneys, &c.....	4
Childbed .....	4
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	0
Rheumatism .....	2
Diseases of Joints, &c. ....	2
Ulcer .....	0
Fistula .....	1
Diseases of Skin, &c.....	3
Diseases of Uncertain Seat .....	93
Old Age or Natural Decay.....	61
Deaths by Violence, Privation, or Intemperance .....	20
Causes not specified .....	1
Deaths from all Causes .....	871

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

May		THERMOMETER.	BAROMETER
Wednesday	4	from 45 to 62	29.92 to 29.90
Thursday	5	34 60	29.90 29.65
Friday	6	45 58	29.46 29.40
Saturday	7	45 58	29.35 29.26
Sunday	8	44 57	29.36 29.65
Monday	9	40 56	29.85 30.04
Tuesday	10	31 57	30.11 30.08

Wind, N.W. on the 4th; S.W. on the 5th, and three following days; N.W. on the 9th, and morning of the 10th; on the afternoon of the 10th, S.W.

The 4th and 5th generally fine; rain fell from 9 till 10 in the evening of the 5th. On the 6th, shower and sunshine alternately, also on the 7th and 8th. On the 9th, showery, thunder and lightning in the afternoon, about a quarter past 4. The 10th, morning and evening clear, otherwise cloudy.

Rain fallen, .78 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL  
OF

**Medicine and the Collateral Sciences.**

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FRIDAY, MAY 20, 1842.

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LECTURES  
ON THE  
ANATOMY AND PHYSIOLOGY OF  
THE INTESTINAL CANAL;  
MORE ESPECIALLY OF ITS MUCOUS MEMBRANE.

*Being the Croonian Lectures for 1842,  
delivered at the Coll. of Physicians,*

By R. B. TODD, M.D. F.R.S.

Professor of Physiology in King's College, London,  
and Physician to the King's Coll. Hospital.

LECTURE I.

IN the Gulstonian Lectures which I had the honour to give two years ago in this College, I took for my subject the anatomy and physiology of the stomach. I examined the form of this organ in the various vertebrate classes, and entered at some length into the investigation of that part of it which, in a physiological point of view, is of the greatest importance—namely, its mucous membrane; and I concluded with a brief statement of the principal facts, touching the influence of this membrane upon digestion.

I now propose to call your attention to the anatomy and physiology of the intestinal canal, more especially with reference to its mucous membrane, as being that portion which determines the physiological office of each division of the canal, and which to us, as practical physicians and pathologists, affords the most numerous objects of interest.

And I trust I need not offer any apology for dwelling upon subjects involving so many anatomical considerations, in lectures before the College of Physicians. No medical body has had, among its fellows and members, anatomists and physiologists of higher reputation—men, distinguished as practical physicians, but who nevertheless did not neglect to cultivate those sciences which are universally allowed to be the foundation of their art. The

names of some of the brightest ornaments of our College are as household words, in the lips of the youngest student of anatomy—and must be handed down to the latest posterity, so long as the science continues to be cultivated. And let it not be said, that in these days, when we profit so much by the labours of our predecessors, and when owing in a great degree to the impulse which they gave to anatomical investigations, medicine has advanced to a high state of improvement—let it not be said, that now the College of Physicians is less interested in anatomy than formerly—is less anxious to encourage and promote the pursuit of it among its members.

In former days, the College of Physicians was the “nursing mother” of anatomy, and numbered among its fellows, the sole teachers of that science. The walls of this building afford ample evidence of this fact, in the numerous portraits of those distinguished men, with which they are adorned.

Our greatest boast is of Harvey—respecting whom, Haller says, that his name is, in medicine, second only to that of Hippocrates.

Certain it is, that his discovery of the circulation of the blood was one of the most complete, and its results the most important, that the genius of man ever accomplished. So far as it went, it was perfect; the lapse of more than two centuries has found nothing to add to, or take from, the Harveian doctrine, and having been founded on the certain and immutable basis of anatomy, it must ever continue a leading doctrine of physiology.

Doubtless the singular philosophic caution which Harvey exhibited, in carefully testing the various proofs of his doctrine, during a number of years, before he promulgated it, contributed greatly to its stability. Eight years were spent by this patient observer, in digesting and maturing his ideas; and let me remark, that the example may not be unseasonably quoted at the present day, when there seems to be more ardour in the



pursuit after novelty, than diligence in the investigation of truth.

Harvey was the first who used the simple microscope in anatomical enquiry. He employed it in the dissection of insects, and in observing the growth of the chick in ovo.

Harvey, in a certain degree, anticipated the discovery of auscultation, inasmuch as he availed himself of the assistance of the sense of bearing, to detect the action of the gizzard in birds, as the auscultator uses it, to determine that of the heart. His words are "*Falconibus, aquilis, aliisque avibus ex prædâ viventibus, si aurem prope admoveris, dum ventriculus jejunos est, manifestos intus strepitus, lapillorum illuc ingestorum, invicemque collisorum percipias.*"

We cannot refer to Harvey without likewise alluding to his friend and apologist, the learned Sir George Ent, to whom we are indebted for the publication of Harvey's book "*De Generatione Animalium.*" Ent's dedicatory epistle of this work to the President and Fellows of the College, ought to be read by all who wish fully to appreciate the character of Harvey. Harvey's zeal in the pursuit of truth for its own sake, his singular modesty, his forbearance towards others, and the careful manner in which he conducted his investigations, are brought out in a most interesting manner, in the conversations therein detailed, between him and Ent. One passage I cannot resist quoting, as illustrating the soundness of his views in reference to physiological deduction. "*Natura equidem ipsa, (says Harvey) est arcanorum suorum fidissima interpret: quæ, in uno genere, aut pressius, aut obscurius exhibet; ea clarius et patentius in alio explicuit. Nemo sane de partis alicujus usu, sive officio recte determinaverit; qui ejus, in pluribus animalibus, fabricam, situm, annexa vasa, aliaque accidentia non viderit, secumque diligenter pensitaverit.*"

I need not remark how clearly Harvey has here developed those principles of physiological enquiry, which were subsequently more fully followed out by Haller, Hunter, and Cuvier.

Among the many celebrated anatomists, who flourished in the latter half of the seventeenth century, those, who were Fellows of the College of Physicians, shone pre-eminent. Thomas Wharton lived at this time, after whom the duct of the submaxillary gland was named, and the author of the first complete treatise on the glands—his *Adenographia*—which contains excellent descriptions of the glands, and also of the placenta and ovary. In this work, too, Wharton described the mesentery more fully than had been previously done, and showed, that cellular membrane and other parts were interposed between its layers.

Throughout his book, Wharton makes

frequent mention of another Fellow of our College, whom Boerhaave calls, "*omnium anatomicorum exactissimus*"—namely, Francis Glisson—a name always associated, with the capsule of the liver, which he discovered and described. In addition to his *Anatomia Hepatis*, Glisson published a very learned book "*De Ventriculo et Intestinis,*" in which he has fully described these parts, and added many physiological speculations. He first applied the term irritability, in the sense in which it is now very commonly used, in reference to muscular fibre, and he seems to have had a very clear notion, of what Haller long after described under the name "*vis insita.*" In treating of the *Robur fibrarum*, he says that it is threefold: *Robur, insitum, vitale, et animale*; "*Robur insitum potissimum consistit in fibræ justâ carnositate, et tenacitate:*" and he points out that in emaciated animals, wasted by disease, the muscles are deprived of their usual power—that in the athletic, in whom the muscular flesh is luxuriant, there is extraordinary power—and that in the scorbutic, those labouring under syphilis, and the dropsical, the tenacity of the fibres is impaired, and their power greatly weakened. From all which he infers, "*Fibras, quò carnosiores, et tenaciores fuerint, eò, cæteris paribus, robustiores esse, et fortiores actiones edere, et e contra macilentiores, et friabiliore fuerint, eò debiliores esse, et citius defatigari.*"

A more clear description of the celebrated Hallerian doctrine of the *vis insita*, I apprehend could not be given; and, believing as I do, that certain facts recently ascertained have unequivocally proved the validity of that doctrine, I am the more glad on that account to be able to trace it up to a Fellow of the College of Physicians.

Another of the great anatomists of this age was Thomas Willis—the father, if I may so speak, of the anatomy of the nervous system, upon the functions of which, so much light has been thrown by English physiologists.

Willis's fame rests upon his two principal works; the *Cerebri Anatome, et Nerverum Descriptio*, and *De Animæ Bentorum*.

The name of Willis is associated, with the arterial anastomosis situate at the base of the brain, between the carotids and vertebrals, and with the spinal accessory nerves (*nervus accessorius Willisii*).

Willis first pointed out the anatomical distinctness of the sympathetic nerve from the cerebro-spinal system, although, at the same time, he maintained that a connection existed between them, that the one was engrafted upon the other, *ut frutex super alio frutice*.

No one can peruse the descriptions which this distinguished man has given of the

anatomy of the brain and nerves, without admiring their clearness, and feeling astonished at the knowledge, which he had attained. We are too apt to forget, how much of what we now know, was pointed out by him: the arrangement of the encephalic nerves, which is now in common use, and which, for practical purposes is sufficiently good, we owe to him. His chapter on the actions of the brain and the rete mirabile contains many highly interesting facts, which are being continually quoted, and his views as to the use of the rete mirabile accord with those generally adopted by physiologists, at the present day.

Nor was Willis less distinguished as a chemist, and a practical physician than as an anatomist. For many years he enjoyed a considerable practice in London; and it is well known that he was the first to recognize the saccharine condition of the urine in diabetes.

In the preparation for his work on the brain, Willis derived considerable aid, from the pencil of Sir Christopher Wren. He was assisted likewise, in the anatomical part, by another able Fellow of the College, Dr. Richard Lower, celebrated by his "*Tractatus de Corde*," an anatomist of the highest class, who was also distinguished by the experiment which, in conjunction with Dr. King, and on the suggestion of the celebrated architect Wren, he performed on transfusion. Lower was the first to point out that the difference between arterial and venous blood was occasioned by the action of the atmosphere.

At the latter end of the 17th century lived Grew, better known as a vegetable physiologist, and a botanist, than as an anatomist. It appears that he was elected an honorary fellow of the College, on account of his proficiency in natural knowledge. He was curator of the Royal Society, and printed a catalogue of their museum.

It is not generally known that Grew had discovered, and delineated the glandular patches in the ileum, now so well known by the name of, Peyer's glands. He is certainly equally entitled to be considered the discoverer of these glands, as the anatomist whose name they bear; for in an essay, appended to his catalogue before mentioned, quaintly denominated "*the Comparative Anatomy of the Stomach and Guts*," he had described and figured these patches with great accuracy in several animals, before Peyer's book reached this country. His delineations are more numerous and much more precise, than those of Peyer; and he seems to have been familiar with the characters of the mucous membrane of the intestines, in a great number of animals, and certainly anticipated many points the discovery of

which some of his successors assumed to themselves.

Grew first described the sweat-pores on the fingers, the existence of which many subsequent anatomists doubted, but which modern researches have clearly proved to be the orifices of spiral tubes, the aggregate of which forms the great excretory apparatus of the skin.

Clopton Havers also flourished at this time. The name of this anatomist is connected with the vasculo-medullary canals of bone, now much better known than formerly. This discovery of Havers was not at all appreciated by succeeding anatomists. His description, however, was completely confirmed by Monro primus; and subsequently Mr. Howship, with very imperfect means of observation at his command, described the general arrangement of the larger canals in bone, with more accuracy than any preceding observer. Of late years, Deutsch, Minscher, and others, both in this country and abroad, have, by the aid of modern improved microscopes, determined the true nature of these canals; have shewn them to exist in vast numbers throughout bone, and to be essentially and intimately concerned in its development, as well as in its nutrition: and thus a later age, provided with better instruments of research, has amply asserted the accuracy of this sagacious observer.

I must not omit to refer here to the physician, after whom these lectures have been named. Dr. Croone was an able anatomist, and enjoyed a large share of practice in London. In 1670, he was appointed Lecturer on Anatomy to the Company of Surgeons, and held it to his death. The Croonian Lecture on Muscular Motion, at the Royal Society, was founded by him—a circumstance which alone would associate his name with the theories of muscular action, even had he not written on the subject himself. At the latter end of this period, Edward Tyson lived, whose monographs upon many subjects of comparative anatomy prove him to have been a most accurate and observing person.

His anatomy of a pigmy, of the rattlesnake, of a porpoise, and other papers contained in the *Philosophical Transactions*, are constantly referred to by comparative anatomists, and contain many original observations which have been fully verified in later times. Tyson assisted Samuel Collins, another Fellow of our College, in his well-known *System of Anatomy*.

Although the anatomists of the eighteenth century, who were connected with the College of Physicians, were not less numerous than those of the preceding period, they were not, with few exceptions, so distinguished; nor were their names so connected with original

research as those to whom I have alluded. The names of James Douglas, Wm. Hunter, and Baillie, are among the most distinguished.

James Douglas was the friend, and, in some measure, the preceptor of Haller, during his residence in this country; and that illustrious man always speaks of him in terms of admiration and affection. He is well known by his *Myographia*, and his work on the Peritoneum.

James Douglas was the master of Wm. Hunter, to whose fostering care British anatomy owes so much, and who, were the governments of former days so disposed to favour science as now, would have done much more. Dr. William Hunter's munificent offer made to Lord Bute, the minister of George III., to appropriate £7000, and his museum, to the establishment of an institution for the cultivation of anatomy, was disregarded, and thus his rich collection was lost to this metropolis.

He, however, left behind him a school of anatomists, in Baillie, John Hunter, Cruickshank, and Hewson, who contributed more than others before them, or after them, to raise the character of British anatomy.

The extent to which anatomy has been cultivated in this country, since the time of these distinguished persons, has not been commensurate with our great opportunities, nor does it appear to have been pursued altogether in the spirit of the school of Hunter and of Baillie. The introduction of the French surgical anatomy, or anatomy of regions, although not without considerable utility to the operating surgeon, has, I think, on the whole, been prejudicial to the advancement of that kind of anatomical knowledge, which, as being most conducive to pathology, is best calculated to advance medical science. It has directed attention to investigations of a much easier kind, and thus diverted observers from following out those researches, which bear most directly on the functions of organs. If the physiology of the various textures of the body is to be based on a solid foundation, it can only be done by laying that foundation in an accurate knowledge of their intimate structure; and, if anatomists are to derive practical utility from their labours, they must devote themselves to those investigations, which are most applicable to general pathology.

I trust that the anatomists of the present day begin to feel, that there is something more demanded of them than the mere knowledge of relative position; nay, that they must pry more deeply, into the structure of parts, than they are able to do by the ordinary means at their disposal.

The vast improvement, which has of late years taken place in the construction of the

microscope, leads us to hope much from the use of that instrument, which is now becoming so general. We are scarcely yet in a position to avail ourselves fully of its aid with benefit in the examination of diseased structures; but when, after the lapse of a few years, we shall have acquired a more precise knowledge of the normal structure, it will be incumbent on us to carry our microscopic inquiries fully into the regions of disease.

It is from microscopic anatomy, normal and morbid, aided by the minute analyses of organic chemistry, and accompanied with the careful observation and record of symptoms during life, that pathology is to derive its future advancement. Nor can any one expect to make material improvements in medical knowledge, who is not competent to conduct his inquiries as a minute anatomist, a minute chemist, and a faithful observer and chronicler of morbid actions.

I must apologize, gentlemen, for having digressed so far from the proper subject of this lecture, and shall now proceed to state the arrangement I propose to adopt.

I shall briefly survey the general disposition of the intestinal canal in the vertebrated classes; in the second place I shall consider the rough anatomy of its coats, especially of its mucous membrane; thirdly, I shall make some remarks on mucous membranes in general; and fourthly, I shall describe particularly that of the intestinal canal, making such physiological and pathological deductions as may seem to be warranted by the present state of our knowledge.

The division of the intestinal canal, which all anatomists adopt in the human subject, applies very generally throughout the vertebrate series. We find a small intestine, the main function of which consists in the separation of the nutritious from the excrementitious part of the food, and in the absorption of the latter; and a large intestine, in which a still further elaboration and absorption take place, but whose principal office appears to consist in the elimination of the fecal matter, and its expulsion from the body.

Such being the type of the form of the intestinal canal, we observe much diversity as regards length and width, whether absolutely, or relatively to the length of the body, and several peculiarities in the development of certain parts in relation to, or connection with the intestine, in the various classes, as well as in different orders of the same class.

In Fishes the intestinal canal exhibits a very simple conformation. In many fishes it passes, very nearly in a straight line through the body: when it does exhibit convolutions, they are few and very slightly developed. A pyloric valve is generally present, separating the intestine from the stomach; immediately

succeeding to this valve, the intestine generally experiences a dilatation, whence it gradually contracts to its terminal portion, which again becomes dilated. This portion corresponds to the large intestine, and commonly a valvular fold of the mucous membrane constitutes the internal boundary between the two divisions of the canal; it terminates in a cloaca, common to it with the urinary and genital organs.

Immediately below the pylorus there are found, in most fishes, certain tubular processes communicating with the intestine, but ending in blind extremities, that float in the abdominal cavity. These constitute the *appendices pyloricæ*, or pyloric follicles, which seem to represent that extensive salivary apparatus, which is connected with the first portion of the intestinal canal, in all the higher animals. They vary considerably in number as well as in size. In *ammodytes tobianus* there is only one; in *pleuronectes fesus* (the flounder) there are two very short ones, placed opposite each other at different sides of the intestine; there are from ten to thirty in many species of *clupea* and *salmo*; and in the genera *gadus* and *scomber* (the common mackerel for example) there are as many as two hundred. In some fishes they are simple; in others they become subdivided or branched at their blind extremities; in others these branches undergo considerable subdivision, and the resemblance to the glandular formation is enhanced by the fact, that these branches are connected by means of cellular membrane and blood-vessels.

In reptiles, the intestinal canal differs from that in fishes, chiefly in having undergone a slight increase of development. The division into large and small intestine is distinct throughout the class, and an ileo-cæcal valve is often present. In *ophidia*, the small intestine presents numerous short convolutions at acute angles; the large intestine ends in a cloaca. The intestinal canal is longest in the *chelonis*, and next to them, in the crocodiles.

In the *chelonis*, the line of distinction between large and small intestine is not so obvious as in the rest; the muscular coat is remarkable for its great thickness. In *batrachia* the difference between large and small intestine is very distinct, being chiefly indicated by difference of calibre; and in frogs by a circular ileo-cæcal valve.

In birds the intestinal canal, although longer than in fishes or reptiles, yet retains considerable simplicity of form. It presents much variety in length, and in the number of its convolutions, according to the food and habits of the bird. The most conspicuous portion of the canal is that which is called the duodenum: it succeeds immediately to

the gizzard, and has always the form of a long fold, which contains the pancreas in it, and hangs freely into the abdominal cavity. The small intestine, more or less folded in different orders, terminates in a short and somewhat wider large intestine, which ends in a cloaca, as in fishes and reptiles.

At the commencement of the large intestine in birds, which is much wider than the small intestine, are two processes, terminating in thin and free extremities, and communicating with the cavity of the intestine. These are the *cæca*: they vary considerably as to length, from simple papilliform offsets, as in the Soland goose, to processes three feet in length, as in the grouse. In some instances there is only one cæcum.

Connected with the small intestine there is an appendage, which is the remains of the duct of communication between the yolk bag and the digestive cavity in the chick. In some birds, this appendage, which is devoid of a muscular tunic, is as large or larger than the *cæca*.

In the mammiferous series, great diversity exists in the form and extent of the intestinal canal. Throughout the class, with a very few exceptions, the commencement of the large intestine is marked by a cæcum, which varies much in size and form: the small intestine is convoluted; and the large intestine ends in the rectum, the cavity of which, except in the Monotremata, has no communication with the urinary and genital apparatus.

In the carnivora, insectivora, and the insectivorous genera of bats, we meet instances of the simplest form of the intestine among mammalia. For, not only is it shorter in reference to the length of the body, but its several parts are less fully developed. The small intestine is very slightly convoluted; the cæcum is very short and simple; the large intestine is cylindrical in form, not sacculated, as in man, and many herbivora.

In ruminants, solipeds, and pachydermata, the intestinal canal is characterized by great length, and wide calibre. In the sheep the intestine is thirty times the length of the body. In the horse I have measured the intestine eighty-seven feet and a half; and if we consider the enormous width of the canal, we may form some idea of the immense extent of the intestinal digestive surface. The cæcum is of great size: its capacity in ruminants is about equal to that of their fourth stomach; but in the horse the cæcum is capable of containing more than three times as much liquid as the stomach.

The rodentia have in general a very long, and convoluted intestinal canal. The small intestine is of small calibre, but considerable length. The cæcum is in most of the genera

of very great size, and in some it occupies a large portion of the abdominal cavity. The whole large intestine is cellulated. In omnivorous rodents, as the rat, the cæcum is small; and in one genus, *myoxus* (dormouse), the cæcum is entirely absent; constituting the single exception to the presence of this portion of the canal in the rodent order.

The cetaceous mammalia have an intestinal canal of considerable length. There is, however, a marked difference in length between the intestines of the zoophagous and of the herbivorous whales. In the former division the length of the canal is to that of the body as 11 or 12 to 1; in the latter, as 20, or even 40, to 1. The proper whales have no cæcum: this is the case in the porpoise.

From the brief and very general survey which I have thus taken of the intestinal canal in the vertebrata, it may be gathered that this portion of the digestive tube diminishes in complexity, as we descend from mammalia to fishes; that a short and simple intestinal canal is generally co-existent with a diet of animal food; and, on the other hand, that a diet of vegetable food, or a conjoint animal and vegetable diet, requires greater length, and complexity in the form and structure of the intestines. In estimating the extent of the intestinal canal, we should not confine our examination, as is generally done, to a mere external measurement of length, as we should thereby be led to form a very imperfect estimate. Deficiency in length, as measured on the exterior of the intestine, may be supplied by increased width, by a more highly developed state of the villi of the mucous membrane, by numerous folds of that membrane, and the energy of the action of the mucous membrane on the contents of the intestine may be augmented by the greater number of the glands, which pour their secretions on its surface.

Much importance is attached by physiologists, and apparently with good reason, to the size of the cæcum. It is impossible, in the present state of our knowledge, to determine the law, which influences its development. It may be stated, however, that there appears to be a direct relation between the development of this intestine, and the indigestible nature of the food. In some instances, we find that a very large cæcum compensates for a less capacious stomach, as in the solipeds; and in these cases there exists a striking similarity in the forms of these two organs. Anatomy certainly seems to indicate that the function of the cæcum is not dissimilar to that of the stomach, and that in it substances hard of digestion are subjected a second time to a reducing action, resembling that of the stomach.

## ON THE PULSE.

By the late JAMES HOPE, M.D. F.R.S.\*

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By the ancients down to Celsus, the pulse was almost overlooked; by Celsus it was pronounced to be *res fallacissima*. Galen subsequently wrote no less than six treatises on it; whence we may, I think, safely infer that to him also, it must have been *res fallacissima*. Nor was the feeling of its ambiguous nature confined to the ancients: for the vast number of elaborate treatises written on the subject, both in this country and abroad, and both before and after the discovery of the circulation, sufficiently evince that a similar feeling has been extensively prevalent among the moderns. So late as the time of Heberden, for instance, the most subtle, over-refined and perplexing distinctions of pulses were universally in vogue. Disgusted and embarrassed by these, Heberden, and his follower Dr. Falconer, cleared the whole away at a single swoop; but, with too rash a hand, they swept away truth indiscriminately with error; for they maintained that *frequency* was "the only circumstance in the pulse of which we can form any clear or determinate idea, and which we can be assured conveys the same information to others as it does to ourselves." Dr. Falconer regarded all "other distinctions as fanciful or whimsical."

I entertain a strong conviction that the main cause of this singular discrepancy of opinion on a subject which has been so long and sedulously investigated, resides in ignorance of the modifications which may be impressed on the pulse by organic diseases of the heart: for I notice in old writers most minute, elaborate, and what might well be thought fanciful descriptions of certain pulses, especially of the intermittent, irregular, and unequal kinds, which I find to be almost, if not altogether, peculiar to certain diseases of the heart wholly unknown to them: if, then, they have misunderstood a single variety of pulse from disease of the heart, we have reason to suspect that

\* Read at the Medico-Chirurgical Society, May 8, 1833.



they may have done the same with respect to others or to all; for of all the diseases of the heart, they were profoundly ignorant.

The modifications imparted to the pulse by this class of diseases, have not, so far as I can discover, been completely and systematically described by any writer down to the present time. The great Corvisart, whose genius penetrated wonderfully deep into a subject which was mystery to his contemporaries, did not possess knowledge enough, without the light of auscultation, successfully to connect the diseased heart and the pulse in the general relations of cause and effect. He succeeded, indeed, in a few instances: but it is manifest, from his occasional inconsistencies, that he felt the sign, in these diseases, to be more than commonly fallacious\*. The illustrious discoverer of auscultation was scarcely more successful. He devotes nearly a whole chapter† to proving that "the exploration of the pulse is far from being able to give an idea of the *general* circulation." "It cannot," says he, "make known the manner in which it is carried on even in the heart‡." He seldom, therefore, mentions the pulse, except as a quotation from Corvisart and others to display its fallaciousness, and to contrast it with the superior advantage of appealing by auscultation to the beat of the heart as a criterion for blood-letting§, &c. MM. Bertin and Bouillaud, in 1824, accurately, though not fully, described the pulses of simple hypertrophy, hypertrophy with dilatation, and hypertrophy with (slight) contraction||; of the pulse of dilatation they merely say that it is "feeble and soft¶;" but as to the pulses of contraction of the valvular orifices, they believe them to be valueless, quote Corvisart to display how totally he was deceived in them, and contend that the auscultatory signs of Laennec are the only indications of valvular disease worthy of confidence\*\*.

How little dependence Dr. Elliotson (in his Lumleyan Lectures in 1830) placed on the pulse, may be collected

from the following observations. "The auscultatory signs are the only means of accurately ascertaining the existence and seat of these affections (viz. hypertrophy, dilatation, and their varieties). The pulse, &c. . . . may all suffer, but the changes induced are too varied for any reliance, any may owe their origin to a thousand other circumstances. In hypertrophy, especially with dilatation, the pulse is frequently full, causing headache, and even apoplexy, if the vessels of the brain are weak or diseased: but when the opening of the mitral or aortic valves is narrowed, it may be very small when the ventricle is hypertrophied, and beats violently. In mere hypertrophy, too, it is small, if the variety is the concentric, i. e. with diminution of cavity. Irregularity of pulse is natural to some persons, so that (in them) regularity occurs only in disease. Irregularity, in others, depends upon disease of the head, stomach, or intestines, or of the lungs. Violence of arterial pulse may be purely functional" (p. 27). "Again," says Dr. Elliotson, "I know that it (a pulse irregular in force and frequency) is very common in the narrowing of the left auriculo-ventricular opening, though possibly not peculiar to it, nor indeed to narrowing of any opening." Of smallness of the pulse in contraction of the left auriculo-ventricular opening, he says, "the importance of this symptom alone is absolutely nothing" (p. 17). In short, like Laennec, Dr. Elliotson depreciates the pulse, and upholds auscultation.

M. Bouillaud, in his treatise in 1835, in consequence, I suppose, of his avowed inability to distinguish the particular valve diseased (an inability which is remarkable, as I had pointed out the mode of effecting this, in my work four years previously), makes a single description of pulse answer for valvular diseases in the aggregate. He says, evidently following Corvisart, "the pulse, irregular, unequal, and intermittent, contrasts by its smallness, its minuteness (*exiguité*), with the energy, the violence, and the extent of the beats of the heart: notwithstanding its smallness, it is hard and vibrating when the contraction is attended with great hypertrophy of the left ventricle\*." I may remark, in passing, that I have

\* e. g. See Bertin, p. 223.

† On the Intermittence of the Beats of the Pulse, vol. ii. p. 473.

‡ Ibid. p. 479.

§ Traité, p. 358.

\*\* Ibid. p. 225.

§ Ibid. p. 480.

¶ Ibid. p. 384.

\* Traité, tom. 2, p. 217.

never seen, and do not believe that there can exist in nature, an irregular, unequal, intermittent, and minutely small pulse, which is simultaneously hard; the qualities being absolutely incompatible. Independent of this, the improbability of a single variety of pulse answering for every variety of valvular disease, is too apparent to require comment, and I shall presently show it to be totally incorrect. In one instance only does M. Bouillaud attempt to connect the pulse with the particular valve contracted, and in this instance he is singularly unfortunate. Still following Corvisart, he says "the pulse is in general more irregular, small, unequal, and intermittent, in simple contraction of the aortic, than of the mitral orifice\*." I have elsewhere shown, and shall presently explain, that the precise converse is the fact†. M. Bouillaud, therefore, has obscured, rather than elucidated, the pulses of the several valvular diseases. He adopts, in his last work, the same pulses for hypertrophy‡ and for dilatation as in the previous treatise of MM. Bertin and Bouillaud, merely adding that hypertrophy with great contraction causes a small weak pulse.

Dr. James Johnson, commenting on the present paper, stated that, after twenty or more years' study of the pulse, in reference both to diseases in general and to those of the heart in particular, he still regarded it as *res fallacissima*.

Thus it appears that, though auscultators have had the merit of attending to the pulses of diseased hearts, they have left the subject in a very imperfect state: to evince how completely it has been pretermitted by non-auscultators—even systematic writers on the pulse—I need only to mention (and it may be done without the slightest disparagement to so distinguished an individual) that Dr. Bostock, one of the most eminent and recent physiological writers, and who may therefore be presumed to represent a large portion of existing opinion, has not made even the most remote allusion to the diseases in question as exercising an influence over the pulse§.

\* *Traité*, tom 2, p. 221.

† *Treatise on Diseases of the Heart*, p. 332; and cases in the *MEDICAL GAZETTE*, Sept. 1829.

‡ *Traité*, p. 444.

§ See *Cyclopædia of Pract. Med.*—"Pulse," by Dr. Bostock.

I have been endeavouring, since the year 1823, to supply the deficiencies to which I allude; but it is not until lately that the subject has admitted of being brought to anything like a satisfactory conclusion, as discoveries on the pulse could only be consecutive to a succession of other discoveries, which, up to the present time, have gradually been giving additional precision and certainty to the diagnosis of cardiac diseases.

I shall divide the following inquiry into two branches:—

First—I propose to show that the several more important organic diseases of the heart produce corresponding pulses: consequently, that the pulse, usually considered eminently fallacious in these diseases, is really an index of considerable precision.

Secondly—I shall institute a comparison between the pulses of organic disease of the heart and those produced by ordinary causes, to evince that nearly the whole of the latter may be closely imitated by the former: consequently, that an allowance must be made for any coexisting disease of the heart before we can pronounce on the value of the pulse as a sign of ordinary disease: a consideration of great importance in practical medicine.

*I. The several more important diseases of the heart produce corresponding pulses.*

In discussing this branch of the subject, it is necessary for me to explain, as I proceed, the methods which I have adopted, and the discoveries by which I have been assisted, in ascertaining the individual valvular diseases; because many, including so elaborate a writer as M. Bouillaud, question the possibility of ascertaining more than the general fact whether there is, or is not, valvular disease somewhere: and unless I can show the contrary—namely, that it is possible not only to ascertain the general fact, but to specify the particular valve affected, I shall not have an adequate foundation for the doctrine that diseases of particular valves produce corresponding pulses. Further, my data being explained, any one will be competent to verify or disprove what will be advanced, by pursuing a similar line of investigation.

In June 1825, I discovered regurgitation through the mitral valve, and

its characteristic murmur—phenomena previously unknown\*, and which rendered the father of auscultation and his disciples unable to distinguish between mitral and aortic valvular disease. This discovery enabled me to ascertain that the pulse corresponding with mitral regurgitation when considerable, was eminently weak, small, intermittent, irregular, and unequal. The same discovery also enabled me to confirm an observation which I had made two years previously, and recorded in the essays of the Royal Medical Society of Edinburgh in 1824, namely that “it is a peculiar feature of obstruction in the mitral valve that, from imperfect transmission of the blood, and consequently deficient stimulation of the left ventricle, the pulse is small, feeble, and irregular;” identical, in fact, with the pulse of regurgitation†.

I further found, as the exceptions to the general law, that when either the regurgitation or the contraction was not considerable, the pulse might not be materially affected, even though the valve presented the appearance of great disease‡. Though I pointed out these exceptions in my work in 1831, I have observed that they are still so frequently overlooked as to create doubts respecting the general law.

The knowledge of mitral regurgitation and contraction, and of their corresponding pulses, enabled me to correct an error into which Corvisart had fallen, and which was adopted not only by M. Bouillaud as above stated, and by Louis (Mem. on Pericarditis, p. 12), but almost universally; the error, namely, respecting the pulse of contraction of the aortic orifice: “The pulse,” says Corvisart, “may retain a certain degree of hardness and tension, but never much of fulness or regularity.

\* See “Treatise on the Diseases of the Heart,” p. 55. In August 1835, I created mitral regurgitation artificially in the ass poisoned with woorara, in an unpublished experiment, in which I was assisted by Drs. Latham and Watson, and Mr. Mayo.

† Several writers have subsequently noticed this pulse as characteristic of mitral contraction; as Mr. Adams, Dublin Hospital Reports, Vol. iv. p. 420; Dr. Elliotson, who quotes Mr. Adams; Dr. Hodgkin, MEDICAL GAZETTE, Vol. iii. p. 448. Mr. Hodgson had also previously observed that, in this affection, there was often a double pulsation of the heart, i. e. two beats to one at the wrist. One of the two impulses he erroneously ascribes to the contraction of the auricle.

‡ See Cyclopædia of Prac. Med., “Valves of the Heart,” p. 421, by the writer, where the rationale of these pulses is explained.

This invariable and permanent irregularity will always be sufficient to furnish a precise diagnosis of contraction of the aortic orifice\*.” Now this, I submit, is, really, the pulse (though imperfectly described) of mitral contraction and of mitral regurgitation; for, by abstracting the cases of this regurgitation and contraction, which Corvisart had not the means of doing, I found, and have elsewhere proved, by cases†, that the characters of “smallness, and unvariable permanent irregularity,” did not in the least appertain to the pulse of aortic contraction, except when that contraction was extreme—a limited chink only; and that then the characters of *hardness and tension*, obviously incompatible with the other characters, were absent: I found that an induration in the aortic orifice, the size of an ordinary pea, had little effect on the fulness, firmness, and regularity of the pulse; and that slighter degrees of contraction appeared to have no effect on it whatever.

The discovery of mitral regurgitation led me to anticipate, and soon to detect, a similar regurgitation through the semilunar valves, also unknown to Corvisart, Laennec, Bertin and Bouillaud, and all other auscultators. Accordingly, in 1831, I announced that a “murmur may accompany the second sound (of the heart) when there is regurgitation through the aortic valves, and its source may be known by its being louder and more superficial opposite to those valves than elsewhere‡.”

\* Quoted by Bertin and Bouillaud, *Traité*, p. 223.

† Treatise on Diseases of the Heart, p. 332; and cases published in the M&D. GAZ., September 1829.

‡ Treatise on Diseases of the Heart, p. 340. Though the regurgitations and their murmurs were discovered by me, they were first published by Dr. Elliotson in 1830 (Lumleyan Lectures, p. 20). He candidly says, “I heard it” (viz., that a murmur resulted from permanent patency of a cardiac opening) “first from Dr. James Johnson. Who originally suspected it, I cannot say. Dr. Johnson imagined he had learned it from Laennec and other writers upon auscultation; but I have found no other notice of it than the erroneous view of Bertin.” I at first thought that Dr. Johnson learned it from his son, to whom I had communicated it; for, in 1829 and 1830, he and myself studied auscultation together in St. George’s Hospital, and I was in the habit of pointing out the regurgitations to him and the students as a discovery of my own, which Mr. James Johnson says he perfectly recollects; but he thinks that his father was acquainted with regurgitation previous to 1829. However, I was in the habit of demonstrating the regurgitations in St. Bartholomew’s Hospital in 1826, and an instance of this is presented by Case XX. of my

In 1833, 1834, and 1835, when pathologically and experimentally investigating the causes of the second sound of the heart, I acquired a more complete knowledge of the aortic regurgitation, created it artificially in the ass, and found that the corresponding pulse was one of the most remarkable and appreciable produced by disease of the heart; namely, a pre-eminently *jerking pulse*—a high degree of the pulse of unfilled arteries, such as occurs after excessive loss of blood, or in anæmia from any cause. It might, indeed, have been anticipated that aortic regurgitation, by unfilling the arterial system, would produce such a pulse. It has not been noticed, to my knowledge, by any writer up to the present time; but I have taught it for several years in my lectures and clinical demonstrations.

The following discoveries have contributed importantly to facilitate the diagnosis of diseases of the heart, and thus, indirectly, to promote the discovery of the corresponding pulses.

1st, M. Laennec ascribed various murmurs of the heart and arteries, independent of organic disease, to spasm; and considered that, as they could not be distinguished from valvular murmurs, they rendered the latter ambiguous signs of valvular disease. I have shown, by experimental and other evidence, that the murmurs in question are not due to spasm, but to friction and vibration of the blood when deficient and too watery, and that they need not create the slightest ambiguity\*.

2ndly, The series of movements in the heart's action, and their relations to the sounds, mistaken by Laennec, Dr. Corrigan, and others, were finally established by the experiments of the writer in 1830†.

3rdly, In a series of experiments which I invented and performed twice with partial success in October and

November, 1834, and repeated with complete success in the ensuing February (and which have subsequently been repeated by Dublin and London Committees of the British Association), the second sound of the heart was proved, by demonstrative evidence, to result from the closure of the semilunar valves; and the first sound was shewn, by evidence verging upon demonstration, and which I have subsequently corroborated, to be occasioned partly by sudden extension of the auricular valves and chordæ tendineæ, and partly by similar violent extension of the muscular walls at the moment when the valves close; to which "bruit musculaire" contributes a prolongation and possibly an augmentation. Certain commentators on these experiments, who have maintained the first sound to be muscular alone, to the exclusion of valvular sound, have indirectly admitted the valvular sound, and thus subscribed to my view\*.

4thly, Having ascertained that the semilunar valves caused the second sound, I was led to notice a new and very satisfactory method of distinguishing whether disease was seated in the aortic or the pulmonic valves; namely, as the sound, whether healthy or morbid, of each set of valves is propagated up its own artery, the sound of the pulmonic valves may be perfectly heard about two inches up the pulmonary artery on the left, and that of the aortic valves, two inches or more up the aorta on the right, the sound of each set being heard almost independent of the other, which is not the case when the stethoscope is placed directly over the valves. This method has the further immense advantage of removing the auscultator so far from the mitral and tricuspid valves that murmurs seated in them are barely audible, and he can thus assert that a loud, near-sounding murmur, heard two inches up the aorta or pulmonary artery, originates in the semilunar valves or great vessels, and not in the auricular valves.

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Treatise on the Diseases of the Heart, taken in that hospital June 7th, 1826. In the following year I was in the habit of demonstrating the regurgitations at La Charité, Paris, at the Clinique of M. Chomel.

\* Treatise, p. 64. Since writing the above, I find that Dr. Corrigan had previously made objections to Laennec's spasm, but I have not yet been able to consult his paper. Bouillaud, in 1835, used a train of reasoning similar to my own. The theory of spasm is now universally discarded.

† Treatises on Diseases of the Heart, p. 10.

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\* For these experiments, see the writer's Treatise on Diseases of the Heart, 2d edit.: Appendix. Dr. Billing, Dr. Carawell, M. Rouanet, Mr. Bryan, and M. Bouillaud, had each inferred the valvular theory of the sounds, but no one had hitherto proved it by direct experiment. M. Bouillaud had even predicted that "the direct or experimental proofs would probably ever be wanting."



Again, I have found that the best situation for exploring the sounds, whether healthy or morbid, of the auricular valves, is not, as has hitherto been supposed, directly over the valves, but where the heart comes in contact with the walls of the chest, so as to present a solid medium for the conduction of the sound. This situation is a little above the apex, and to the left or the right, according as it is wished to explore the mitral or the tricuspid valve. These situations have the further great advantage of being so remote from the semilunar valves, that murmurs originating in them can scarcely be heard: the auscultator may therefore assert that a near-sounding murmur is seated in the mitral valve, or, if he listen more towards the right, in the tricuspid.

5thly, Laennec divided murmurs into the *bellows*, *sawing*, *filig*, and *rasping* varieties, and considered the three latter of these to represent successive gradations of *roughness*; the higher grades being, as he imagined, usually connected with an osseous cause, though this is by no means universally true. The pitch or key of the notes, however, was not noticed by Laennec or any other writer; yet this affords important and easily appreciable information in the diagnosis of the individual valvular diseases. I first directed attention to it in 1831\*, having noticed it in 1825 and 1826 (*e. g.* in Case XX. of my Treatise, dated June 1826); but I have subsequently ascertained the circumstances with more precision.

The key or pitch of murmurs depends mainly on the depth below the surface at which the murmurs are generated, those produced near the surface being on a higher key, and *vice versa*; but the strength of the current producing the murmur has also a slight modifying power, a strong current slightly raising the key, and a weak one depressing it. The following account, founded on much observation, will, I think, be found pretty correct, and, at the same time, easy of comprehension.

Murmurs seated in the pulmonary orifice or artery, from being superficial, are on the highest key like a whisper of the letter *e*, or sometimes of *s*. Murmurs

seated in the ascending aorta, where it approaches near to the sternum, have usually the same character.

Murmurs in the aortic orifice, being rather more deeply seated, are a tone lower, like whispering *r*.\*

Murmurs from aortic and pulmonic regurgitation, on account of the retrograde currents being weaker, are generally a tone lower, like whispering *aw* by inspiration; and the click of the valve, when audible, may be represented by the word *paw*.

Murmurs in the mitral valve, from being still more deeply seated, are still more hollow-toned, like whispering *who*. The tone, however, is somewhat raised by very strong currents, as in violent mitral regurgitation, and depressed by feeble currents, as in diastolic mitral murmurs. Tricuspid murmurs are rather higher toned than mitral, because less deeply seated.

It is scarcely necessary to explain that depth or hollowness of murmurs is referable to remoteness and to reverberation through the chest. For these same reasons, if an *s* or *r* toned murmur, produced in the semilunar valves, be listened to near the apex of the heart, above the clavicles, or on the back, it sounds hollow and remote†.

A murmur on any tone may be either smooth (bellows) or rough (rasping).

Of musical murmurs of the heart, it is merely necessary to say that they indicate nothing more than ordinary murmurs; for in seven or eight cases I have found them follow, accompany, or end in ordinary murmurs. I therefore believe that they are occasioned by an *accidental* configuration of valvular disease calculated to produce musical vibrations, precisely as one configuration of the lips produces a whistle, while another yields merely a blowing sound. M. Bouillaud is of the same opinion, and even employs the same illustration. In all my cases the musical sound has been confined to regurgitations; and I have understood from Mr. Wheatstone that the presentation of an edge to a stream is the arrangement best calculated to produce musical vibrations. It remains, therefore, to be seen whether musical tones afford pre-

\* For the ingenious idea of these two letters, *s* and *r*, I am indebted to M. Bouillaud, though he employs them somewhat differently.

† I find that Dr. Elliotson has noticed this effect of distance, in his Lumleyan lectures.



sumptions of regurgitation rather than of direct valvular obstructions.

Attention to the rules now given, respecting the situations in which vascular diseases ought to be explored, and respecting the various keys which murmurs present according to their seats, renders it as easy to pronounce which is the particular valve diseased as to say whether there be valvular disease at all. Further, an auscultator capable of making this particular diagnosis is far less liable than others to be misled by inorganic murmurs of the heart; since, if the murmur proceed from a regurgitation, or be seated in any other orifice than the aortic, he can decide at once that it is organic.

Assuming it, then, to be true that particular valvular diagnosis is possible, we have data by which we can ascertain the pulses corresponding with valvular affections—the establishment of which fact was indispensable to the prosecution of the present inquiry.

Such are the several grounds on which I found the opinion that the more important diseases of the heart are productive of corresponding pulses. We next proceed to the second branch of the subject.

[To be continued.]

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CASES OF  
SUBCONJUNCTIVAL DISLOCATION  
OF THE LENS,  
AND OF SUBCONJUNCTIVAL TUMOR OF THE  
VITREOUS HUMOUR.

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*To the Editor of the Medical Gazette.*

SIR,

IN the MED. GAZETTE, vol. xiii. p. 833, amongst my "Observations on a Peculiar Dislocation of the Lens," will be found some strictures on the conduct of Mr. Lawrence\*, in consequence of that gentleman having incorrectly quoted the report of a case of this description published in the MED. GAZETTE†. On referring to Mr. Lawrence's second edition, recently published, I am glad to find that he has withdrawn the objectionable passage‡. Mr. Lawrence has also, in the same page, referred

to the following case reported by Dr. Mackenzie, and illustrated by an explanatory delineation of the eye. "The annexed figure represents the effects of two different accidents, which, at the interval of some years, befel the right eye of an old man, the first patient in whom I happened to meet with a subconjunctival dislocation of the lens. On inquiring into the history of his case, he told me that the separation of the iris, represented in the figure, had been the result of the earlier accident, but that the tumor which I saw at the upper part of his eye was the consequence of a recent fall on the corner of a chair. The tumor had exactly the form of the lens, and the natural pupil was dragged towards it. On laying open the conjunctiva, the crystalline was easily withdrawn. The opening through the choroid and sclerotica, by which it had escaped, seemed already perfectly united. The retina was no wise impaired, notwithstanding the serious effects produced on the other textures of the eye by the two accidents, and with a cataract glass the patient could read an ordinary type\*."

In its result this case was still more favourable than that of Syddal†, which may probably be attributed to the following circumstances:—The former injury, in consequence of which the iris was detached from the ciliary ligament, would leave the portion of iris thus detached in a relaxed state, so as to allow of the internal structures of the eye more readily yielding to the pressure, caused by the second accident, which produced the dislocation of the lens; and, by this means, prevent them from suffering so much afterwards. The opening in the choroid and sclerotic coats "seemed already perfectly united" in Dr. Mackenzie's case, whilst in mine there was a subsequent tumor, caused by protrusion of the vitreous humour, and the laceration remains ununited. In both instances the lens was removed at an early period after the occurrence of the injury which had produced its dislocation—a plan of treatment which appears calculated to prevent the destructive changes consequent upon such injuries, which generally terminate in the loss of vision. Such, at least,

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\* Treatise on Diseases of the Eye, first edition, p. 143.

† MED. GAZETTE, vol. ix. p. 178.

‡ Treatise, p. 155.

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\* Practical Treatise on Diseases of the Eye, Case 200, p. 343.

† MED. GAZETTE, vol. ix. p. 178; and vol. xiii. p. 832.

was the consequence in the instances to which reference is made in my former communication\*, and also in the following.

**CASE.**—William Weavers, æt. 64, received a violent blow on the left eye, from a man's fist, more than five weeks since, which caused at the time severe pain and swelling, and loss of vision.

March 8th, 1841.—The upper part of the cornea had now become opaque, sloughy, and ulcerated; but the centre remained sufficiently transparent to allow of the examination of the pupil, which was contracted, fixed, and nearly filled with pus. At the upper part of the globe, a short distance behind the corneal and sclerotic junction, there was a circumscribed semi-transparent tumor of the conjunctiva, which both Mr. Barton and myself considered to be caused by the dislocated lens. I therefore divided the conjunctiva with a cornea knife, and extracted the lens inclosed in the unruptured capsule, both structures being perfectly transparent. I also punctured the lower part of the cornea, to relieve the eyeball from the distension occasioned by internal suppuration. He suffered much less after the removal of the lens, all the inflammatory symptoms subsided, and the eye gradually sank into a state of atrophy.

*Case of a tumor of the conjunctiva, caused by injury, closely resembling that produced by subconjunctival dislocation of the lens.*

March 26th, 1841.—James Howarth, a carter, æt. 38: fifteen days since was struck on the left eye by a piece of dirt, which had been thrown at him. The cornea was perfectly transparent, the pupil much dilated and irregular, making the iris almost of a horse-shoe shape. The pupil was clear, and the lens apparently absent. There was a distinctly circumscribed tumor of the conjunctiva on the superior part of the globe, presenting external characters similar to those found in the sub-conjunctival dislocation of the lens. The conjunctiva covering the tumor and upper part of the sclerotica was very vascular, the other portion not much more so than usual. Vision was much impaired, but not entirely lost. Upon puncturing the tumor with a cornea-

knife, no lens was found, the swelling having been entirely dependent upon an extensive protrusion of vitreous humour through a laceration of the sclerotica. The eye was kept closed by means of strips of court-plaster for two days, after which the nitrate of silver was repeatedly applied to the tumor, which, although reduced by having been punctured, remained for some time so prominent as to cause pain on motion of the eyelid. The other part of the treatment consisted in the free use of the saturnine lotion, a blister to the temple, and common aperients. When I saw the case two months afterwards, there was, in the situation of the injury, a slight fulness of the conjunctiva, which was so thickened as to prevent my ascertaining if the sclerotica had healed; the pupil was still dilated, irregular, and immoveable, and no useful vision remained. This case shows that it may sometimes be difficult to form a correct diagnosis of the nature of such tumors of the conjunctiva. But if the swelling be caused, not by the displaced lens, but by protruded vitreous humour, the practice of dividing the conjunctiva should, nevertheless, be adopted; for although effects equally destructive with those which supervene upon subconjunctival dislocation of the lens do not follow the injury, yet the process of reparation appears to be facilitated by puncturing the conjunctiva, and thus giving a free exit to the portion of vitreous humour lying extravasated between it and the sclerotica. The entire removal of the tumor is not, indeed, thus effected; fresh portions of vitreous humour continuing to protrude through the sclerotica as long as the laceration remains open: but, by the repeated application of the nitrate of silver, such an adhesion of the subconjunctival cellular texture situated over the laceration is procured, as eventually precludes any further protrusion of vitreous humour. What is called sclerotic staphyloma is frequently caused by similar injuries. In one instance, which came under my notice many years after the accident had occurred, the appearance of the tumor, cornea, and pupil, closely resembled that recorded in Howarth's case; with the exception that the tumor presented the dark bluish colour usual in cases of sclerotic staphyloma.

\* *MÉDICAL GAZETTE*, vol. xiii. p. 332.

All irritation from the effects of the injury had, according to the patient's account, long since subsided, and his imperfect vision was much improved by the use of a cataract glass, which, in consequence of the dilatation of the pupil, was inclosed in a broad black rim.

Notices of other cases of subconjunctival tumors produced by dislocation of the lens, and by protrusion of the vitreous humour, will be found recorded, by Mr. Middlemore, in the Report of the Birmingham Eye Infirmary, published in the ninth volume of the Transactions of the Provincial Medical and Surgical Association, pages 508-510.—I am, sir,

Your obedient servant,

R. T. HUNT.

Manchester, May 12, 1842.

#### OBSERVATIONS

##### ON THE

#### TREATMENT OF FRACTURE OF THE NECK OF THE THIGH-BONE.

BY A MEDICAL OFFICER OF THE ARMY.

(For the Medical Gazette.)

I BELIEVE it will be generally admitted that no subject of surgical treatment has been more unsuccessful in its results than in cases of fracture of the neck of the femur; and it has appeared to me, that the explanations or apologies for our failures in such cases has been anything but satisfactory, or even in accordance with what is known and regularly inculcated, of the effect of pressure on the most solid parts of the animal frame. At present I merely allude to those cases of failure which have been imputed to the circumstance of the fracture having been within the capsular ligament, and that there, that membrane intervening between the fractured portion of the bone, prevents the ossification of the fractured parts. I shall not notice what is generally known and assented to, that pressure against such an intermediate substance would most certainly, in a person of a sound constitution, occasion in time the absorption of the intervening obstacle to the re-union of the bone; but I will venture to affirm, that even cases of fracture of the neck of the femur within the capsular ligament,

although the person injured would become immediately lame, still the distortion of the limb, at the seat of the injury, would not be easily ascertained even by the most practised and discerning examination, unless the fracture had been occasioned by extraordinary external violence.

In cases of the description which I now speak of, practitioners seem to me to have lost sight, and never considered the import and utility, of the ligamentum rotundum which binds the head of the femur to the acetabulum. Without this wonderful piece of mechanism, a person moving in the horizontal position, or even in walking upon an uneven surface, would be in continual danger of dislocating the femur. In this view of the matter, I therefore maintain that, as the humble servants of nature, we should endeavour to follow her dictates in presuming to rectify any irregularity that happens in the wise and beneficent purposes of Providence. It is probably, in a great measure, owing to the rupture of the round ligament in cases of dislocation of the thigh, that a certain lameness always inconveniences the sufferer after it has been reduced, attended with a considerable swelling or fulness of the muscles adjoining the trochanter, particularly on every attempt to move the limb. If the opinion thus surmised be correct, it will be easily understood that, on a fracture of the neck of the femur taking place, the body of the bone being thereby disconnected with the acetabulum, it will, by its weight, naturally recede from the broken portion within the acetabulum, even by the best contrived bandaging for securing the apposition of the fractured parts, unless some means are had recourse to in order to support and maintain the trochanter in its healthy position: it is from neglect to this part of the treatment, as commonly practised, that I am inclined to suppose that in a great degree our failure in obtaining a cure in such cases of fracture is to be imputed; for I think that in a just apposition of the fractured ends of the bone no intervening substance could possibly prevent an ultimate re-union of the parts. I shall now, in a summary way, state a case or two in proof of the propriety of the practice I have hinted at: the parties being my friends, although not under my care, every cir-

cumstance of their cases was very well known to me.

The first is the wife of a physician, a lady past the meridian of life, weakly, of a spare habit: had her right thigh-bone broken at the neck by something taking her foot as she walked through the drawing-room: when laid upon the sofa, her husband could not perceive any particular injury where she complained of pain; and in this state she was carried to bed: she passed the night in much pain in the part; and it was not till from twenty to thirty hours elapsed that the nature of the accident was ascertained. The fracture was reduced when she had been laid on a firm mattress; a firm bandage was tightly bound round the pelvis, and the limb being stretched in a straight line was bound in such a manner as to prevent all motion in it. She luckily escaped any feverish symptom; but in the course of a few weeks her husband got a cushion made to slip under the back, in order to relieve the intolerable pain and uneasiness she experienced from laying so long in the recumbent posture upon an unyielding surface: this cushion also gave support to the trochanter, and happily, at the end of four months, on the bandages being taken off, a perfect re-union of the bone was found to have taken place. This lady is now perfectly well, and the lameness but very little to be noticed.

The next case I shall mention is the wife of a colonel in our army. She is about the same age as the above, of a full habit, subject to inflammatory affections of the chest, and has suffered from gout: the neck of the thigh-bone was fractured, by her being blown over in a high wind when walking on an uneven surface. Her accident happened a month or two previously to that of the case above mentioned: they were attended by the same practitioner, and the same mode of treatment adopted—the bandaging of the outstretched limb, &c. &c. This lady had occasion to be bled and leeches during the first months of her confinement; but unluckily, on the bandages being removed at the end of four months, it was found that the bone had not only not united, but that the fracture was in every way as upon the occurrence of the accident. Upon this occasion her husband was earnestly recommended to have a similar cushion used

as in the former case, upon the fracture being reduced; and to the satisfaction of all her friends it was found, on removing the bandages, after laying four months more in the recumbent posture, that the bone was perfectly united: perhaps an unique case in the annals of surgery, that a bone should unite after several months' separation. I have seen this lady repeatedly since her cure: the motion of the hip-joint is perfect; but although the knee-joint is not affected, in consequence of the straight position in which the limb was placed, and the bandaging, the muscles have thereby lost their natural action; and from this cause she cannot bend her leg. The heel is also drawn up, owing, as I suppose, to so long confinement in one posture, and the consequent contraction, and perhaps the conglutination, of the fibres of the flexor muscles. In other respects she enjoys her usual health.

I shall next mention the case of a lady about forty years of age, the wife of a surgeon to an hospital. The accident occurred when playing at shuttlecock with her children in the drawing-room. In this case, also, the nature of the injury was not immediately discovered. When I saw her, a few days after, she was lying in a soft bed, with a bandage round the pelvis; the limb laid straight, but not bandaged.

In this case, I have no doubt, the trochanter was supported and maintained in its natural position by the pressure of the mattresses of the bed, which were not firm, as in the former cases, but soft and yielding: this lady very soon recovered the use of her limb, without any remarkable lameness. I could, to the above, add other cases, where, I believe, a fracture of the neck of the thigh-bone had taken place within the capsular ligament, and the protuberance of the fractured bone not being discernible on the first examination, the disease has been treated as a severe bruise, and which terminated in permanent misery and lameness; or if the true nature of the injury has at length been discovered, the failure of the cure has been imputed to the intervention of the capsular ligament between the ends of the broken bone. The inference I draw from the foregoing statement is, in the first place, that every means should be adopted for securing

the apposition of the fractured ends of the bone, and that this view is mainly to be effected by supporting the great body of the femur, which otherwise, from its weight, must recede from and sink under the surface of the broken portion, remaining fixed in the acetabulum: an inspection of the skeleton must satisfy the most superficial that such will be the consequence when the person, having the neck of the femur broken, is laid upon his back. I do not see the necessity of placing the patient, in this state, upon a hard, unyielding mattress. I know it often occasions intolerable distress to the patient, and may therefore protract, if not interrupt, the cure: a mattress in ordinary use will obviate many of these inconveniences. The fracture being reduced, the limb should be laid in a bent position, as in other fractures of the femur, so that all the muscles may be in a state of complete relaxation; and after the bandage is firmly secured round the pelvis, a long cushion of horse-hair, about six or eight inches in breadth, according to the bulk of the patient, and about the same thickness, and so long as to reach from the under and upper part of the os ilium, and going under the trochanter to a few inches below it. This cushion should be secured with tapes at each end to fix round the body and the thigh, and should be carefully examined every day to see that it does not shift its place: or to avoid the chance of this happening, the bandage around the pelvis might be so constructed as to give the necessary support to the thigh. In this way the cure of such cases will be more certain, and require less time than the practice now in general use.

#### CIRCULATION IN THE BRAIN.

*To the Editor of the Medical Gazette.*

SIR,

IN your last number Dr. Haworth, of Bolton, still argues that the cerebral circulation "feels the full force of atmospheric pressure," and that the experiments of Dr. Kellie are not opposed to his views. It will not require much consideration to show that not only these experiments, but even the statements of Dr. H. himself, clearly prove that there is no pressure whatever exercised by the power in question on the circula-

tion in the brain. If I understand Dr. H., which I confess is not a very easy matter, he affirms that the cerebral circulation is influenced by atmospheric pressure through means of the blood-vessels which enter the cranium from without; this pressure, in the first instance, being exercised on these "vessels before they reach the brain," "and that they feel the full force of it after;" that the pressure is *conveyed* to the minutest ramifications of these vessels; and thus we have the atmospheric pressure exercised upon the whole contents of the cranium, from the centre to the mass. These views, I hold, are both highly erroneous and self-contradictory.

1. In order to prove his opinion, Dr. H. compares "the skull, its contents and connected vessels, to a long-necked globular bottle filled with water, &c. and turned upside down, the narrow part corresponding to the blood-vessels, and the globular part to the skull and brain"!! Surely Dr. H. does not seriously intend to pass this off for an argument? He cannot be so entirely ignorant of the rules of reasoning as to bring forward illustrations in proof of his assertions. What analogy can possibly exist between the circulation of the blood in the brain, and a globular bottle filled with water and turned upside down? If the blood-vessels and nerves entered the brain at a certain point only, and if their external surface were subjected to atmospheric pressure in the same manner as the water in the bottle, then Dr. Haworth might have some slight shade of plausibility for tracing an analogy between them; if this even existed, and if the "atmospheric pressure could be no more denied in the one case than in the other," instead of Dr. Haworth's views receiving any confirmation from the circumstance, they would stand confuted, because this would prove too much for him, inasmuch as not a single drop of blood could make its escape from the cavity of the cranium, until the atmospheric pressure was admitted in an opposite direction. The same remarks will equally apply to his illustration "of the egg broken at one end," which he pronounces as analogous to the circulation in the brain.

2. Dr. H. seems to have overlooked the fact, that blood-vessels emerge from



the brain through the skull, as well as enter it from without. Now if it be true that atmospheric pressure is exercised upon the latter class of vessels, and if it be true that these vessels convey this pressure to their minutest ramifications, it must necessarily be carried to those vessels which emerge from the skull, as, according to Dr. H., confined fluids transmit pressure to any amount to any distance:" besides this, the vessels which come out from the brain must be submitted to the same atmospheric pressure at the moment they reach the surface, and in the same manner, as those which enter through the skull convey this pressure to parts within the cranium. Now, according to this, the cerebral circulation must be completely under the influence of atmospheric pressure—a pressure exercised not only from the centre to the circumference, but from the circumference to the centre. Here again the views of Dr. H. stand confuted upon his own shewing. If such pressure as he contends for were exercised, as we have already seen, it would prevent any escape of blood from the brain; and by extending his principles to the vessels which emerge from the skull, we see that blood-letting would completely empty that cavity—a circumstance which he admits to be impossible in ordinary circumstances.

3. Admitting that the atmospheric pressure is exercised upon the blood-vessels without the cranium, it does not follow that this pressure is communicated to the blood-vessels within the skull, as Dr. H. asserts it to be; I think the foregoing observations disprove the assertion. We have seen that the idea of a pressure from the centre to the circumference is absurd, and that pressure of the atmosphere, in the ordinary acceptation of the term, is impossible. But we have not only reasoning to advance against the absurdity of atmospheric pressure being conveyed to the brain through the means of the blood-vessels and nerves, but we have actual observations and experiments to prove that no such communicability of pressure takes place. Dr. Kellie and others have observed that, in the brains of executed criminals, there was not the slightest trace of congestion of the blood-vessels, whilst those on the outside of the skull were most immoderately distended, and

even ruptured. Dr. K. strangled dogs, and neither congestion nor extravasation was found within the head, whilst both existed to the greatest degree without. Now if the principle of "confined fluids transmitting pressure to any amount to any extent" be applicable to the circulation of the blood in the brain, and if the atmosphere act on the brain as Dr. H. imagines, we would expect to have found matters in a very different condition. It were useless to protract this discussion any farther. It is, I think, sufficiently proved that the views of Dr. H. are completely at variance with the experiments of Dr. Kellie—the original assertion which I made.

I would beg to inform Dr. H. that I am not singular in my opinion respecting these experiments proving the exemption of the cerebral circulation from atmospheric pressure. Dr. Kellie himself took the same view, and assigns this as the very reason why blood-letting does not empty the blood-vessels of the brain.

Besides several others who have publicly expressed the same opinion, Dr. Watson of London, in his admirable lectures, now in the course of publication in the *MEDICAL GAZETTE*, takes the very same view, and makes allusion to these very experiments, as proving the circumstance, and at the same time he states, that he has confirmed several of Dr. K.'s observations by his own personal experience. I would refer Dr. H. to page 471 of your 28th vol. for satisfaction on this point. In conclusion, I would observe, that so far as I am concerned, this discussion is at an end. Any of your readers who may feel interested in the subject, by a perusal of the experiments to which allusion has been so often made can easily determine whether Dr. H. or your humble correspondent have taken the legitimate view of their bearing upon the point at issue between us. If in my "own anxiety to stop the progress of erroneous opinions," I may have caused any unpleasant feelings to arise in the mind either of their originator or his friends, I sincerely regret it.—I am, sir,

Your obedient servant,  
JOSEPH BELL.

Barrhead, May 11, 1842.

## MESMERISM.

*To the Editor of the Medical Gazette.*

SIR,

I SHALL inclose with this letter a slip of paper, informing you of my name and address, and you will recognise in me an old contributor to your columns. I do not choose to put my name to this communication, for this good reason among others, that I wish to escape being assailed with a multiplicity of questionings by my numerous acquaintance here. About one o'clock the day before yesterday I was sent for in a great hurry, to see the butler of a lady in the neighbourhood, who had just fallen from a ladder. I found he had received a heavy blow on the head, accompanied with a slight lacerated wound of the scalp, a severe bruise on the left arm, with some abrasion of the cuticle, and an extensive bruise over the sacrum and left hip. He was cold, pallid, with small pulse, and complained of feeling very sick. He seemed to be suffering severe pain in the injured parts, and (as is usual among the Irish in his station of life) was sufficiently energetic in the expression of his suffering. As the system had evidently received a shock, I ordered warm fomentations to the injured parts, prescribed a stimulant, and said I would see him again in an hour or two. On making my report to the lady, she said, "You'll think me very ridiculous, but I have one thing to ask of you." "What is it?" "Have you any objections to my mesmerising him?" "Not the least in the world." "How long may I keep him asleep?" "As long as you like; until to-morrow morning if you can." "But won't there be some danger?" "I don't think there is much danger of the sleep *you* are likely to give him." "Well, I see you are determined not to believe in mesmerism; but I shall try it on him if I have your permission." "You may mesmerise him as much as you please," was my reply. On calling about two hours after, I found him warm, with his pulse and colour restored, and in a tranquil sleep. I learned from the gardener, who was officiating as his nurse, that after he had assiduously fomented him for some time, during which he had com-

plained bitterly of his sufferings, the lady had come in, and sent him to sleep by mesmerism. I did not much heed the mesmeric part of the story, but thinking him going on well, I left directions to be sent for if he got worse. I had a note from the lady late that evening, saying that he woke up at five o'clock in a good deal of pain, but that on having recourse to mesmerism he had fallen asleep again, and so continued.

I called yesterday, and before seeing him I had a long introductory narrative from his mistress of the wonderful benignant effects her manipulations had produced on him. I do not recollect particulars, for I paid but slight attention to the relation, being pressed for time, and my thoughts wandering about some appointments I feared I should not be able to keep. On seeing the man I found him going on very well, with very little headache, and complaining only of the soreness of his bruises. I hastily asked him a few questions. He affirmed that the mesmeric passes always took away his pains; but I recollect there was this discrepancy between his statement and that of his mistress,—she said it took only five minutes to relieve his pain and send him to sleep, whereas he said it took a quarter of an hour. I prescribed an active aperient, and left him.

On going this morning, the servant was about to show me into a sitting-room, but I chose to go straight to the man's bed-room. On entering I found him fast asleep. I spoke to him, called him, shook him, pinched him, but could not wake him. Leaving his room, I met the lady, who said, "You won't be able to wake him, he is in a mesmeric sleep; I will go and wake him for you." She went back with me into the room. He was lying in bed on his right side, with his face to the wall, but inclined upwards; so that we stood at his back. She was about to wake him up, when I said, "Stop! I think I have heard they cannot feel in this state; let me try." I took out my pocket case, and as his left arm was lying out of bed, I smartly pinched the back of his hand several times with a sharp pointed forceps, but he gave no indication of feeling. I then attacked his whiskers with the same instrument, and pulled out several hairs one after

another; but still no indication of feeling. "Won't you believe now?" says the lady: "are you not convinced now?" "I confess I am rather astonished," I replied. "I'll try if I can put this arm into a cataleptic state," said the lady. She raised it up until it was perpendicular to his body, and while busy in making the passes, with her head directed away from me, I took out my tenaculum, and softly carrying it through the bed-clothes, having a fair mark, and measuring my distance well, I gave him at least a quarter of an inch of its point in his gluteal region, and repeated the thrust. I fully expected a start and a yell that would have electrified the magnetiser; but not a muscle moved, not a feature changed. This by-play of mine passed while the lady thought I was intent on her manipulations, and to the present moment she knows nothing of it. She succeeded in fixing his arm, and it required great force to remove it from the position she had placed it in. After waking him she left me alone with him. I had known the man for years, have attended him professionally on three or four occasions, and should never have suspected him of trying to deceive, or playing tricks. However, I charged him with it rather roughly, and said he ought to be ashamed of trying to make a fool of me in that way. He declared his innocence with every appearance of sincerity, and I, after upbraiding him and cross-questioning him for some time, left him, with, if possible, the increased conviction, that he had been completely insensible to my rough treatment, and was not aware of my presence until he was awakened by his mistress. During his apparent sleep he readily answered the questions of his mistress; said he felt cold and sick, and that he would wake up if he could. He also imperfectly answered questions I put to him, after I had loudly repeated them to him, which the lady said he ought not to have done, according to the usually observed effects of the mesmeric art. I am at a loss to know how any man (and that man particularly) could sham so well, as not to evince pain upon having a tenaculum thrust into his posteriors.

I fear the length of this communication will have exceeded the space you can well afford it, and I must therefore

abstain from further remarks, but I will subscribe myself, what I have always been inclined to be,

A MINIMIFIDIAN.

May 12, 1842.

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## MEDICAL GAZETTE.

Friday, May 20, 1842.

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"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

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### THE DEBATE ON MILITARY FLOGGING.

EVERY one must have remarked that when the tide is rising on the sea-shore, its progress is often dubious to the careless observer. Although certain to push forward its waves to the beach which they are ultimately to cover, advance alternates with retreat; and sometimes an advance is so distinctly less than the previous one, that it is really a kind of retreat, so that the spectator has good excuse for his mistake.

Just so it is with truth; its advances are often slow, and sometimes, alas! exchanged for retreats; so that the hypochondriacal have occasion to fear that the good cause is lost, and that instead of increase of light, we are likely to be overwhelmed with primæval darkness. But truth is immortal, and can bide her time; the tide rises, and will ultimately level the cliffs which it seems yet unable to attain.

Again, while the great body of water goes on, individual drops may be hurried back by the wind into the ocean which they have left, and thus be rendered incapable of covering the coast which, just now, they seemed certain to reach.

The advancing and retreating tide is but an image of human opinions; and while some go on manfully till

they have levelled the abuse which first excited their indignation, others hurry back into the ocean of doubt, and shrink from the realization of their own wishes.

Captain Boldero is in this predicament: he was once the declared opponent of military flogging, the most flagrant violation of humanity still practised in these islands; he is now its declared advocate.

Whether, with the present composition of the British army, it might be possible instantly to abolish military flogging, we will not pretend to say; but we freely confess that the predictions to the contrary, the assurances that its abolition would be equivalent to disbanding the army, though uttered by men of note, have but little influence upon us. Vaticinations equally lugubrious, and always falsified by the event, will occur to every one's memory. Who does not recollect that glib argument for the capital punishment of forgery—that England, being a commercial country, could subsist only by credit; and credit only by the extermination of forgery? Yet with unchange'd forgers, credit and commerce remain. So it might be found in the present case. But granting that the punishment must be continued for the present, it might assuredly be further limited, both in the number of offences to which it is applicable, and in the number of lashes inflicted.

How stands the question at present? On the 15th of last month, Captain Bernal, in the House of Commons, proposed the abolition of military flogging, in time of peace, excepting in cases of theft, or on line of march; and he prefaced his motion by some calm and judicious observations, including a short history of the mitigation of the practice. Before 1812, even a regimental court-martial was unlimited in the number of lashes which it might inflict. In

that year the maximum was fixed at 300. In 1830, the greatest number to be inflicted by a district court-martial was *limited* to 500. Finally, in 1836, the punishment was limited, by sentence of a general court-martial, to 200 lashes; by sentence of a district court-martial, to 150; by sentence of a regimental court-martial, to 100.

Nor must we forget to mention that, in 1833, the offences to which the punishment is applicable, were defined, with one exception. This single exception occurs in the phrase "other disgraceful conduct," which might easily be made to include a variety of peccadilloes not worthy of so terrible a penalty. This limitation took place in consequence of a strong minority in the lower house, on a motion for the abolition of corporal punishment; the numbers having been 140 to 151. So excellent is discussion, and so sure to produce good fruit!

Two apposite instances were alleged by Captain Bernal to show the possibility of maintaining discipline without flogging.

One was the abolition of flogging among the native troops in India by Lord William Bentinck. "There is an unanimous agreement in all the committees," said his Lordship, "that flogging, however degrading and injurious, cannot entirely be abolished. They do not even stop for a moment to inquire into the practicability of an adequate substitute. With them corporal punishment is the *sine qua non*, without which the discipline of the army cannot be maintained. I denounce this opinion as prejudice, because it is opposed to reason. Though I am not surprised at the opinion, I cannot forget that, for many years, in conjunction with ninety-nine hundred parts of the officers of the British army, I entertained the same sentiments. It is only from my reflection and discus-

sion that my own prejudice has given way. I now feel confident that this degradation will speedily disappear before a more reasonable and enlightened legislation, even in the British army."

The other example, usefully, but less completely apposite, is that of the Irish constabulary force. It consists of 7000 picked men, who are drilled among the regular troops, but not flogged with them.

But it may be answered, and has been answered, that the constabulary force is better paid than the regular troops. True; it is one of the disadvantages in our army that the pay is too low to be a permanent attraction. Hence, a young man of the lower classes rarely enters the army with the consent of his parents, as Adam Smith long ago observed; and hence arise the various frauds which are practised to escape from the service\*. When, to the slenderness of their pay, and the restraint under which they live, we add the boyish age at which many of them are decoyed into the service, can we wonder that the terrors of the lash should be required to keep them at their work? In other employments, instant and unconditional dismissal is a threat held out to the incorrigible; here it would too often be welcomed like a fountain in the desert. "The greater part of the recruits," said Capt. Bernal, in his speech, "were boys of sixteen, entrapped under the excitement of liquor, and deceived by the false promises of pay and promotion held out by the recruiting sergeant."

Enlistment for a term of years, which Capt. Bernal advocates together with Windham, Wilberforce, Lord Lynedoch,

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\* "Soldiers commonly maim themselves to obtain their discharge, and sometimes even to become convicts, as was the case in New South Wales a few years ago. The men were ordered to be kept in the regiment to which they belonged, and to perform the duties of scavengers."—*Marshall on the Enlisting, &c. of Soldiers*, 2d edit. p. 145.

and Major General Archibald Campbell, would undoubtedly sweeten many of the hardships of the service. It would be the best preventive of that despair which too often seizes upon the soldier who has enlisted for life. Of the deaths which take place in the cavalry, says Mr. Marshall, one in twenty is the result of suicide.

Captain Boldero denies having voted in favour of the abolition of corporal punishment more than once; namely, in 1836. In 1838, (such is his present interpretation,) he only asked for a select committee to inquire into the state of military punishments and rewards in the British army. Some honourable members have undoubtedly attained that art which Themistocles was desirous to learn—the art of forgetfulness; and though Capt. Boldero, in 1838, may not have moved in direct terms for the abolition of flogging, his motion was understood to be of that purport, and as such we then commented upon it\*.

Nay, Mr. Macauley reminded the gallant member that in moving for a select committee he had said: "I call upon the house to put an end to this brutal and barbarous torture. The practice necessary for maintaining the discipline of continental armies is not required for the British soldier; for he may be governed by more ennobling impulses than those of terror."

Lord A. Lennox observed in his speech that no further step towards the abolition of flogging could be taken, until the condition of the soldier, and especially his moral character, was improved. There are now four colonels in the army, who underwent corporal punishment, when privates. This is intended, of course, as a fact in favour of flogging. Lord A. Lennox meant to ask, how can you say that the lash is debasing, when it allows soldiers to

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\* *MEDICAL GAZETTE*, March 31, 1838.



rise so high from the ranks' But the fact cuts both ways; for we might ask in reply, how can you say that it is necessary to use the lash with spirits so generous that they can soar from the station of a private to that of a colonel?

Mr. W. O. Stanley was convinced "that if flogging took place in the face of the public, not a month would elapse till such an outcry would be raised as must put an end to the practice."

This is a good practical observation; for there many things which to be hated need but to be seen. Nor was his concluding remark less pertinent. "In his opinion, much good had been done by discussion; for if the matter had been left in the hands of military men, flogging would have continued to this hour in full force."

Major Vivian thought that the former abuse of the power of flogging formed no argument against its legitimate use at the present day. Granted; but the former abuse, coupled with the former defences of that abuse, show clearly that nothing is too monstrous to find an advocate; and make us hope that the 200 lashes of the present system will in turn be forced to yield to the voice of reason and humanity.

The Major thinks Captain Bernal's motion unseasonable, particularly as the army is about to be increased.

We will conclude with noticing a single point in Colonel Rawdon's speech. He defended the sentence of a court-martial, of which he was president, by which a soldier was sentenced to 150 lashes. It may have been right to flog the man; but were not the lashes too many? Does it follow that because scourging is, under existing circumstances, an indispensable punishment, it is necessary to inflict it to the utmost verge of safety — until the surgeon, watching the fluttering pulse, gives notice that nature can bear no more?

If, in the Jewish commonwealth, in the early morning of civilization, 40 lashes were a sufficient maximum, why should ours be of five times that amount? Why must we go so far beyond the limits permitted in the Russian, Prussian, and Austrian armies? The truth is, that while generally advancing in the van of the continent, we have in this point retained more of the fierce and vindictive usages of the middle ages.

A French pamphleteer, having put forth a new *brochure*, asked Sir James Mackintosh his opinion of it. "Every thing that you say is very true," replied Sir James; "but in England we assume it all as data."

In this matter of military flogging, on the contrary, we are behind the average intelligence of the age; and the things which are assumed as data in favour of humanity by the despotic Austrian, and the barbarous Muscovite, must here be argued, as if they were the most subtle refinements of philanthropy.

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## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

DR. SEYMOUR IN THE CHAIR.

May 10, 1842.

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*Peculiar symptoms affecting an entire family, and terminating in death.* By JOHN WILSON, M.D. Physician to the Middlesex Hospital.

It appears that the family, consisting of father, mother, and three children, were in good health up to the evening of December 30, 1840. On January 1, 1841, the father, Giovanni Arzoni, a Neapolitan, and manufacturer of colours, was taken ill with gripping pains and purging, which never ceased till death. He was sick at times, but never vomited; the motions were offensive and black; had frequent cold fits during the day, followed by much fever. The joints from the first were swollen, not red, but so painful that he could not be put into a warm bath. He was considered by the medical man who attended him to be labour-

ing under typhoid fever. He died on 20th January. On examination after death, the stomach was found healthy, but slightly discoloured in one part, attributable only to a natural cause: it contained a small quantity of fluid (homogeneous), principally animal matter. Intestines healthy. Lungs and pleura presented strong evidence of inflammation, *quite sufficient to account for death*. The youngest child, æt. 2 years, died on 16th January. On examination after death, there was no morbid condition of any of the viscera but the lungs, and they presented some little congestion only: the stomach and intestines were specially healthy. The above information was obtained from the evidence given at the coroner's inquest; the cases were not seen by the author. On the 26th Jan. the survivors, the mother and two children, were admitted into the Middlesex Hospital, under the care of Dr. Wilson. The mother, who was about four months advanced in pregnancy, was taken ill on the 2d Jan. with pain in her head, and sleeplessness during the night, and she lost her consciousness. The bowels were affected with severe pain, and there were frequent evacuations, sometimes only of foetid gas, at others of matter like putrid flesh. Three days after she lost the use of her limbs, and had pain in the joints. On the sixth day, oedema of the feet, legs, and thighs, came on, and the urine was scanty, high-coloured, and offensive: water flowed from the mouth, which "had a cankerous taste." On 15th March, she gave birth to a very small infant, which only lived 24 hours; she herself died on 21st March, labouring under symptoms of puerperal fever.

The details of this case, as well as the cases of the two children who also died in the hospital, are carefully related by the author, to which our limits oblige us to confine ourselves.

In all the three patients the most prominent features of their sufferings were the general soreness of the fleshy parts as well as of the joints, exquisite sensibility of the skin when touched, and the pain produced whenever they were moved or their position changed, according to their so frequently expressed wishes.

Next may be noticed the oedema, and particularly that of the inferior extremities, which was present in all the three; the alkaline state of the urine, when admitted, and their desire for acid drink; the faces of all being pale, haggard, and so care-worn as to give to the children the aspect of aged dwarfs, from their hollow cheeks, sharp features, exsanguined and emaciated bodies. At the same time their appetites were great; that of Mary Ann ravenous. But the mother's never was good; on the contrary, at times it was difficult to induce her to taste

even some trifling sustenance. The mother, at different times, was much exhausted by diarrhoea, and both the children suffered from it, but less severely. During their afflictions the intellects of all preserved their integrities; lastly, there was the "cankery" taste of the mother, the "metallic" taste of the boy, the watery state of the mouth and eyes, in each; the teasing, hacking, dry cough, common to all, and affecting the children particularly towards the last. Then their lying sometimes without any covering, even during the coldest season, when at nights the external atmosphere was 10 or 15 degrees below the freezing point, and their objecting to even a sheet, while their flesh was so greatly wasted, and their lungs became less and less capable of absorbing oxygen, from the gradual infiltration of blood into parts at their vesicular tissue, diminishing proportionally the respirable portions. The death of the mother was accelerated by parturition, and examination after death showed very extensive disease in both the abdomen and chest, yet probably differing considerably from what might have resulted had parturition not occurred, and had she died, like the children, of the affection common to all of them, and not been sooner carried off by a new disease supervening on the original one.

The abrasions or ulcerations of the sulci of the stomach of the children have been noticed; but they were so slight that, in ordinary cases, they might have been overlooked, without attention having been particularly directed to that organ. Neither the mucous membrane of the intestines, nor other parts of the abdominal viscera, showed any particular change from the normal state.

But the organ by which death finally entered appeared in these two to have been by the lungs; for the blood at last seemed infiltrated into their tissue, rendering portions of them dark, and so heavy as to sink in water, and resembling considerably the state of the lungs of those who died of the spotted fever in 1837, and which I have described in the MEDICAL GAZETTE as non-circumscribed pulmonary apoplexy, caused by the blood becoming so altered as to escape from its proper vessels into the tissue of the lungs, thus rendering portions of them (as in these) black, and so heavy as to sink in water. Yet these parts were not circumscribed by healthy lung, but they gradually shaded off from the heavy dark parts to the respirable portions.

The author abstains from giving any opinion as to the cause of these deaths.

After the admission of this part of the Arzoni family into the hospital, the coroner caused the bodies of the father and infant to be disinterred, and examined. A chemical analysis was made, and an inquest held; yet

no conclusive evidence resulted. So that legal, chemical, and medical investigations, combined, have not been able to unravel the mystery which envelops the cause of death.

Dr. Addison begged to ask the author what was the condition of the kidneys in these cases. As the paper had been read the conviction became constantly stronger in his mind that these were cases of scarlatina, of a kind not uncommon, in which the eruption either does not appear at all, or appears but for a short time and on a small part of the body, so that it may be easily overlooked. Reviewing all the symptoms described, and especially the acute oedema and other signs of dropsy, he should have expected that the kidneys would present some of those changes of aspect or of structure which, as far as he had seen, they always present in cases where dropsy supervenes after scarlet fever: such as increased vascularity, a change of colour, or some other distinct alteration.

Dr. Wilson said the kidneys were perfectly healthy in all the cases. As to the albumen which was present in the urine of one of them, he could not lay much stress on that as a sign of scarlatina, for he had constantly observed it in diseases where there was at least no permanent disease of the kidney. The eruption which was present bore no resemblance whatever to that of scarlet fever, and did not come out till late in the disease; nor, as far as he could tell, was there any characteristic sign of scarlet fever in any of the patients.

Dr. Merriman said that it was a strong argument against the existence of scarlet fever, that in no one of five cases was there any characteristic or well-marked eruption. It was certainly not rare to meet with isolated anomalous cases, where little or no eruption existed; but when scarlatina affected a whole family it was sure to show itself in a distinct form in one or more of the members: many might have the disease in an obscure manner, but at last it would appear in one with all its obvious characters, and leave no doubt of the nature of the affection in the others. That, however, had not occurred in the cases just read: in all, the symptoms were alike obscure.

The President (Dr. Seymour) was strongly inclined to refer the symptoms and the deaths of all those persons to the effects of poison. As the cases were read, he was forcibly struck with their resemblance to those related as the consequences of slow poisoning; more especially of that which was supposed to be employed so frequently in the 17th century. The circumstance of the man being a colour-maker, who it was very probable used some deleterious material

in his business, was very favourable to this view of the case. Many instances were well known, of poisons, such as that of lead for example, which, slowly introduced, and in small quantities at a time, produced an almost inexplicable series of symptoms, and sometimes death, affecting in succession, perhaps, every organ of the body. Altogether, the cases had the character of being produced by the repeated influence of small quantities of some deleterious substance, some mineral poison: and it was strongly against the notion of their resulting from any epidemic influence, that this one family was alone affected, and that the neighbourhood, and the other persons even in the same house, remained perfectly well.

Mr. J. Dalrymple, coinciding in this view, said, that it was probable the deleterious substance was some material which the man used in the manufacture of the ultra-marine, for which he was said to be celebrated. The genuine ultra-marine was calcined lapis lazuli, a very costly material, which there was every inducement to adulterate: and it was well known that nine-tenths of that which was sold as ultra-marine was spurious. He did not know what this man's secret of manufacture was, but he thought it very probable that the material which it was said he concealed from all his workmen was some poisonous salt which had, by accident or design, destroyed him and his family.

Dr. C. J. B. Williams suggested that it was some compound of arsenic. It was well known that the material commonly employed in the adulteration of ultra-marine was cobalt, a metal which, in its natural state, exists in combination with the ores of arsenic. There was, also, no one poison of which the effects were so anomalous, or exhibited so generally in all the tissues, as those of arsenic, which, in these respects, came more nearly to the character of the influence of malaria than any other substance known.

Dr. Truman suggested the improbability that the children should be poisoned by any material used in their father's trade, in which they were too young to have assisted.

Mr. Arnott said that these cases had, at the time of their occurrence, excited great interest at the Middlesex Hospital; and he, among others, had seen them. The first impression naturally was, that they were the result of the influence of poison, and the question of their being produced by the slow action of small and repeated doses of poison was then mooted; but to his mind such an explanation was rendered exceedingly improbable, by the fact that the symptoms had, in all the five cases, begun almost simultaneously, and were in all severe at the beginning.

Dr. Addison said that he also was about to use this same argument. What he had

heard did not move him from his first conclusion; the cases had, at first, all the characters of acute disease, and in their later progress all those of the sequelæ of acute disease. He therefore still thought it probable that they were instances of obscure scarlet fever; and he believed no deduction could be drawn from the disease being limited to a single house, for he had known this to occur in cases of genuine scarlet fever, which had remained limited to a single house for several months, all the individuals being successively, and some of them repeatedly, attacked by it.

In answer to a question from the President, Dr. Wilson said there was no probability of malaria or any noxious influence existing in the air of the apartments in which the people lived: they lived, in fact, in considerable comfort, in well-aired and well-furnished rooms; for the man made a considerable sum by a very profitable business.

*A case in which Pregnancy was unattended with the usual signs, and in which parturition occurred without labour-pains—rupture of the funis, which remained untied forty-five minutes.* By THOMAS LEWIS, Esq. Liverpool. [Communicated by Dr. C. J. B. Williams.]

The case was that of a lady, æt. 41, who had noticed an enlargement of abdomen for six or seven months. She felt certain she was not pregnant, because she had not experienced symptoms similar to those of her first pregnancy. Catamenia appeared last, eight or nine months ago. External examination not proving satisfactory, examination *per vaginam* was made, which disclosed the nature of the case. The os uteri was dilated to the size of a shilling, the neck entirely expanded, and the membranes and child's head could be felt. Though informed she was pregnant, she was sceptical, and made no preparation for the event.

On January 5th the author was sent for, and found the child born before his arrival: the funis was ruptured about four inches from the umbilicus. It appears the lady had suffered from diarrhoea for two days previous. At one o'clock A.M. she awoke, she says, with griping pains in the belly: these continued until six, when she got out of bed for ease. She walked into an adjoining room, and bending herself, rested her hands on a table. Suddenly the waters broke, and the child was expelled, and fell on the floor. She states positively she had no pain in the loins, nor bearing-down pains, previous to the expulsion of the child. The author considers the following facts established by the case:—

1. That pregnancy may occur, and nearly

reach its termination, without many of the ordinary signs.

2. That the arteries may contract, like other hollow muscular organs, without the consciousness of the mother.

3. That rupture of the funis is attended with little or no bleeding.

The practical doctrine he infers from it is, that in cases of illegitimate births occurring suddenly, and where the child is found dead, the circumstances should be of a very decided character before the guilt of infanticide be fixed on the mother.

## MEDICAL AID SOCIETY.

### HANDSOME REMUNERATION!

*To the Editor of the Medical Gazette.*

SIR,

WITH this I beg to forward you the purport of a handbill publicly exhibited a short time since on the walls of this place, and the Society (of which it was the advertisement) is now in full operation, midwifery having been recently accepted by its medical officer, in addition to his already arduous duties, without any increase in the proposed scale of remuneration.

Hitherto the profession in Macclesfield have stood respectably: medical ethics have been adhered to, the dignity of the calling supported, and beyond quackery, and the practices of a host of the *unlicensed*, it has had little to disturb the repose of its position. But this scheme of supplying cheap medicine, &c. although established avowedly for the benefit of the poor, appears now to have no limit: already many shopkeepers, and others of a like grade (who aforesaid cheerfully paid their medical attendant the customary fees), have been admitted, and a steady canvass is still proceeding, *volens volens*, to induce others to become members. Sooner or later this must affect the pockets of the other practitioners, as well as their standing and reputation with the public; and in vain have they almost unanimously protested against this beggarly competition. There is a public dispensary and Union doctor in full operation in this town, and it will avail little that the legislature protects us against empirics, whilst we have amongst ourselves (and in this instance the partner of one of the oldest and most respectable practitioners in the town) those who do not scruple to hire themselves on terms at once degrading and unprofessional. What is to be done in this case? To scout a man who can so far demean himself and his profession I fear would make but a sorry impression. If you think an exposure of this in the pages of your excellent journal will be

of any service, you will use it accordingly, or if otherwise you can suggest a better mode of proceeding in reference to this case, you will equally oblige

Your obedient servant,  
A CONSTANT READER AND  
SUBSCRIBER.

May 2, 1842.

" MACCLESFIELD MEDICAL AID SOCIETY.

" J. TURNER, Esq. Park Green, Surgeon  
to the Society.

" The inhabitants of Macclesfield and its vicinity are respectfully informed that a Society is being organized, which, for a small weekly subscription, proposes to insure to its members the benefits of medical attendance and medicine in cases of sickness" [and now of midwifery].

" This Society admits families of all ages in sickness and in health, residing within two and a half miles of the Macclesfield Sunday School.

" The terms are one halfpenny per week for all above twelve years of age; and under that age every three are taken for that sum. Entrance one penny. Any female member paying sixpence on or before the birth of any of her children, such children shall become full members from the date of their birth. All persons paying one month's subscription in addition to the entrance fee, on or before the 1st of January, 1842, shall be full members, and entitled *to all the benefits of the Society.*"

#### THE PUFF DIRECT.

*To the Editor of the Medical Gazette.*

SIR,

IN the Reading Mercury, of the 7th inst., appears the following paragraph, which need only be noticed to elicit that contempt from the profession which it merits. It is a matter of regret that men should enter the profession whose ideas of professional etiquette and propriety are so loose, and whose merits are so hidden, as to require public attention to be called to one successful case. It leads us to suspect it to be the only one. No such paragraph ought to have been admitted, unless with the sanction of Mr. Bulley.

" William Thresher, late a patient in the Royal Berks Hospital, was, three years previous to his admission to that institution, unable to move without crutches. Feeling deeply sensible of the benefits he has received, he begs to tender his thanks for the same, more particularly to Mr. F. A. Bulley, through whose care, by the blessing of Almighty God, he is now enabled to walk without any assistance."

Hoping that you may consider the subject worthy of your consideration, I beg to sign myself

Your obedient servant,  
AMICUS.

London, May 9, 1842.

#### INJECTION OF AIR INTO THE EUSTACHIAN TUBE.

*To the Editor of the Medical Gazette.*

SIR,

IN your publication, of the 6th May, at page 59, I find that an anonymous correspondent imputes to me "an exertion of mechanical ingenuity" which I never made; and adds, that "I consider that I have overcome a difficulty" which I certainly never combated.

If it were conceivable that a person, calling himself a medical man, could be so ignorant of the plainest principles of pneumatics as to mistake an apparatus operating by dilatation for one for effecting condensation, I should not presume to infer that your correspondent cannot have read the report he refers to, otherwise he would not have made so unfounded an assertion, nor have taken so uncourteous a liberty with the name of a person of whom he knows nothing.

The very simple apparatus, which an accidental circumstance led me to suggest to Dr. Turnbull, being sufficiently described in Chambers' Journal (the report which I imagine Medicus refers to), I shall not trouble you with any account of the "exertion," nor of the effects of its application; and shall only add, that, however much he may doubt the veracity or the power of observation of the numerous persons who have benefitted by it, he will find, if he make his inquiry in a candid spirit, that the mass of evidence will be still more "incontrollable" than the get of condensed air from Kramer's machine, of which he so forcibly expresses his disapprobation.—I am sir,

Your obedient servant,  
JOHN ROBISON.

Edinburgh, May 9, 1842.

#### ATTENDANCE ON THE POOR.

*To the Editor of the Medical Gazette.*

SIR,

IN your GAZETTE, dated 6th May, a gentleman, signing himself M.D. in an article entitled "Attendance on the Poor," states that, "in the eye of the law, a physician or surgeon is not duly licensed to practise as a medical man;" and in substantiation of this assertion, remarks, that he "believes it has been decided, in several cases, that neither



the surgeon nor physician can act as an apothecary, unless he also possesses the requisite license."

It appears to me that M.D. is attaching a different meaning to the words *medical man* to what the more enlightened portion of society is accustomed to do, whatever may be the vulgar usage of the word. If in the "4th & 5th Will. 1, cap. 76," it is definitely stated that *apothecary* and *medical man* are used as synonyms, then, in concert with M.D., I am inclined to entertain doubts of the legality of the recent medical regulations; if not, I fancy them to be perfectly legal.

If you can find room for these remarks, I shall feel obliged.—I am, sir,

Your obedient servant,

M.R.C.S.L.

Jesus College, Cambridge.

May 1, 1842.

#### A LETTER ON THE COLD WATER TREATMENT OF PRISSNITZ AT GRAFFENBERG.

As the cold water treatment at Graffenberg by Prissnitz has excited so much interest, we think the following extract from the letter of a gentleman who was a patient there in June last, may be acceptable to our readers:—

"It requires great patience and perseverance to go through the cold water cure, and it is decidedly the most discouraging of any other. I shall now give you an exact account of what I have to go through every day, as well as all other persons who are able to bear it. The attendant comes into my room at 5 A.M. with a wet sheet as cold as ice. I get up, while he puts a large thick blanket on the bed over which he lays the sheet, which I have to stretch myself on, when he wraps it close all about me, and then regularly packs me up, so that I am unable to stir a limb, and then puts a soft down bed over all. I remain in that enviable state for one hour: my first impression was that I should be perished to death, but in about

fteen minutes I was in a most comfortable heat, and generally slept until 6 o'clock, when the man enters and unpacks me, taking the sheet away, leaving the blanket close about me, when I then go to the bath room, which is situated but a few steps from my bed-room, when I plunge in head and heels. I am then well dried, and after being dressed, I set out to walk until 8 o'clock, when I go to breakfast, first taking three or four tumblers of cold water, and about six more before night. Fancy about three hundred persons from all nations sitting down to breakfast on bread, butter, and milk, there being no tea or coffee allowed; we have also abundance of strawberries, so that I assure you we all feel perfectly content, and enjoy

it much: at 10 o'clock I must be in my room to undress and take a douche bath, which at first I did not get enamoured with. The water is conveyed in wooden pipes from the mountain, and is as cold as possible. When that is over, and I am dressed, I have but a short time to walk, as I must be in my room again at half-past 11 o'clock, where a sitz bath is brought in, where I remain sitting for twenty minutes, after which I have until 1 o'clock to amuse myself in the best way I can, when the dinner bell rings, and we all congregate as we did in the morning. The room is a very fine one, being 120 feet long by 50 broad, and capable of dining 500 persons, which number and more are here under cure, but a great many stop at Frywalden, a small and neat town one mile distant, and where Prissnitz goes twice a day to visit his patients. You would suppose I had the remainder of the day to myself, but not so, for at 5 o'clock I must again go into the wet sheet, and take the bath after, as in the morning. We meet at 8 to supper, which consists of the same fare as at breakfast; I am generally in bed by ten, but not before the man comes in with two long wet linen bandages, which he puts round my waist, and at the back of the neck, and between my shoulders, by way of making me comfortable for the night. You can fancy, from the above how I am to pass my days here, that I have not much idle time on my hands. I did not mention that, in addition, I have to swallow from twelve to fifteen tumblers of cold water. Graffenberg is a very high hill in the centre of three valleys, and, what makes it very picturesque, it is all finely wooded at the top, and walks made all through, and on the sides, with numerous seats of all dimensions, placed for the company: and an amateur band comes from Frywalden twice a week to play, and on every Sunday there is a full band that plays all the time we are at dinner, and again after supper, when such as are inclined commence dancing."—*Dub. Journ. of Med. Science.*

#### OSSIFIC DEPOSITS IN THE ARTERIAL SYSTEM.—GANGRENE OF THE FEET.

MR. HAMILTON exhibited the recent parts in this case, the subject of which had arrived at the advanced age of 101. In the aorta, there were several bony plates between the internal and middle coats; in some places the internal coat had been destroyed, and the bony plates projected into the cavity of the vessel; the osseous deposits were most abundant at the bifurcation of the arterial trunks. Examples of this were shown in the celiac axis, and in the arteries of the upper extremities. Mr. Hamilton pointed out the diseased condition of the subclavian,

vertebral, and coronary arteries. The subject of the case was a dairyman, named James Stewart, who was attacked with gangrene of the toes about seventeen days before death. Mr. Hamilton saw him on the fifth day. The toes, as represented in the drawing, which Mr. Hamilton exhibited, were black, dry, and shrivelled, and the integuments beyond the sphacelated parts were of a dark chocolate colour. An attempt was made by nature to arrest the gangrene, but it failed, and the disease continued to spread until a few days before death. The dorsum of the foot was pale and cold, and stripped of epidermis to a considerable extent; on the sole there were several livid vesicles filled with serum: there was very little pain, but the tenderness on pressure was very great. The man sunk gradually, and died on the seventeenth day from the first appearance of the disease. Mr. Hamilton observed that Pott, who first described this affection, appeared to be ignorant of its true pathology; for he denies that an ossified state of the vessels is the cause of the disease. The researches, however, of Cruveilhier and Carswell have proved that an ossified condition of the vessels is one of the most frequent causes of the disease, and that in most cases of the kind the arterial branches are found to be more or less engaged. In some of these cases the progress of the morbid change can be very satisfactorily traced. In addition to ossification of the artery, and disease of its internal coat, the latter is very often absorbed at various points, the bony spiculae project into the cavity of the vessel, and around these projections the fibrin of the blood coagulates, giving rise to a gradual obstruction and ultimate closure of the affected tube. This afforded some explanation of the way in which the arteries were plugged up, but would not account for the absence of circulation in the foot, unless the smaller vessels were also obstructed, which actually was the case. Mr. Hamilton showed one of Carswell's plates, in which the same appearances were observed as in the preparation which he had laid before the Society. In the plate were seen several bony spiculae projecting into the cavity of the vessel, round which deposits of fibrin had taken place. In Stewart's case, Mr. Hamilton observed that in tracing down the femoral artery the same changes would be seen as he had previously pointed out in the aorta. In some parts the coats of the vessels were greatly thickened; in others studded with bony plates, and the whole artery felt like a hard cord, its cavity being narrowed so as barely to admit the end of a straw at the upper part. Lower down, the calibre of the vessel was still farther reduced, and the popliteal, immediately before it divides into the tibial and

peroneal, was completely obstructed. The opposite femoral artery exhibited similar changes. A curious fact connected with this case was, that in both extremities, the peroneal and anterior tibial arteries were both longer than the posterior tibial, and it was remarkable that the same condition has been delineated by Cruveilhier; in both extremities the arterial trunks were obstructed from the ham down to the toes. Evident traces of the same morbid process, but not amounting to obstruction, were to be seen in the innominate, subclavian, carotid, and vertebral arteries, all of which presented thickening and erosion of the internal coat, with small deposits of bony matter, the disease being chiefly seated at the point where the trunk of the vessel divided into branches. The patient in this case had gangrene of both feet. His pulse was about 104, and very feeble.—*Dub. Journ. of Med. Science.*

## FRACTURE OF THE NECK OF THE FEMUR,

### WITH CHRONIC RHEUMATIC ARTHRITIS.

MR. SMITH presented a specimen of fracture of the neck of the femur, occurring in a person aged sixty-six, who had been subject to chronic rheumatic arthritis. Mr. Smith said that he had very seldom met with cases of the coexistence of this disease with fracture of the neck of the femur within the capsular ligament. The present case, however, was one of this description. The shortening of the limb did not amount to an inch, and the eversion of the foot did not appear so well marked as it usually is: the two fragments being interlocked in each other so as to prevent eversion of the foot. The fibro-synovial folds were torn across completely on the anterior surface; but posteriorly they were perfect. Mr. Smith said that the reason of this was, that when the neck of the bone is broken, the shaft being rotated outwards, stretches, the anterior part of these folds while the posterior part is relaxed; in fact, the rotation outwards approximates the intertrochanteric line to the base of the head of the bone. Hence the front is usually torn, while the posterior portion remains intact. As to the arthritis, one of the principal effects of it was an ivory deposit on the head of the bone. The disease in this case presented one peculiarity, namely, that the ligamentum teres had not entirely disappeared; it was, however, unravelled in its texture, and reduced to a few shreds. Mr. Smith observed, that it was rather rare to meet with the coexistence of fracture of the neck of the femur with chronic rheumatic arthritis. He could not say what was the reason of this; perhaps it was from the inability of the patient to walk, which might render him more cautious, and consequently less liable to acci-

dent, or, perhaps, from the partial absorption of the cervix femoris, the head and shaft of the bone were brought into closer approximation. This, perhaps, might account for the rare occurrence of fracture of the neck of the femur in cases of chronic rheumatic arthritis. Mr. Smith also exhibited a specimen of complete absorption of the neck of the bone in this disease, in which the head had sunk below the level of the trochanter major. — *Dub. Journ. of Medical Science*.

## CURIOUS

## CASE OF CHRONIC PLEURITIS

## WITH OSSIFICATION OF THE DIAPHRAGM.

KOHUN, a convict, was admitted to the gaol here upon the 8th Dec. 1838, and died 13th March 1839: he did not wish to go into hospital, but was ordered to be put under medical treatment by me, as he appeared to be very sickly, much emaciated, and unable to labour. On admission, his pulse, tongue, skin, &c. were quite natural, and his appetite was very good. The most remarkable feature in the case was, that his voice was quite weak, and he could only speak in a gentle whisper, even when he endeavoured to speak as loud as possible: he said that he had lost his voice two years ago, and he could not tell how: he stated that debility was his only complaint. The native doctor informed me that this man had been often in hospital during the last two years with fever, but no mention was made of cough or disease in the lungs; the lower part of the right thoracic cavity was examined, and on percussion was very dull. As no disease could be discovered, he had little or no treatment till seven weeks before he died, when I found out that he had a slight cough, which soon became troublesome, and was accompanied by acute pain in the lower right thorax, where the sound was so dull on percussion. On the application of the stethoscope the respiratory murmur could not be heard. The pulse was quite natural to the last. He was treated by repeated applications of leeches and blisters to the pained part; the usual inward remedies were also administered, but debility increased daily, and some anasarca came on before death.

*Sectio Cadaveris*, 13th March, 1839.—

Thorax: On being laid open much disease was observed on its right side: close to the sternum a perfect cavity was formed by a strong false membrane, which contained some four or six ounces of serum: the inner coat of this bag was soft, and like jelly, but the outer was strong and thick. On attempting to remove the right lung, the adhesions of the pleura costalis and pulmonalis were so strong that they could not be sepa-

rated, and the lung was brought out piecemeal; to a considerable extent it was found in a hepatised state, and sank in water.—  
Diaphragm: The portion of this muscle situated between the liver and right lung was found ossified to a considerable extent; so much so that it was a difficult thing to remove or cut it with a knife. Liver was much enlarged, and engorged with blood.

REMARKS.—The perfect ossification of a considerable part of the greater muscle of the diaphragm appears to have been the loss of voice in this case, expiration being performed so slowly that the air could not act with force on the organs of voice. The pulse never rose above the natural standard, and the appetite was keen to the last. The throat was also examined, but no disease could be detected.—*Indian Journ. of Med. Science*.

## LIST OF PRIZE-MEN

*At the different Medical Schools of London\*.*

## ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.

Thursday, May 5, 1842.

*Medicine*.—First prize, T. J. Austin, London; second prize, Henry Mitchell, Cambridge.

*Clinical Medicine*.—Prize, Henry Mitchell, Cambridge.

*Surgery*.—First prize, John Henry Wise, Banbury; second prize, Benjamin Lever, Culworth; third prize, James H. Coveney, Stilton.

*Clinical Surgery*.—Prize, Benjamin Lever, Culworth.

*Anatomy and Physiology*.—First prize, Charles Robinson, Bradford, Wilts; second prize, Edward Dewes, Coventry; third prize, William Pollard, Plympton, Devon. Honorary certificates, James H. Coveney, Stilton; W. S. Kirkes, Moorlands, Lancashire; and G. Saunders, Newfoundland.

*Materia Medica*.—Prize, Thomas R. Evans, Lynn, Norfolk.

*Chemistry*.—First prize, W. S. Kirkes, Moorlands, Lancashire; second prize, Josiah Blomfield, London. Honorary certificates, J. M. Girdlestone, Rainthorpe, Norfolk; and J. Phillips, Redruth, Cornwall.

*Midwifery*.—First prize, John Henry Wise, Banbury; second prize, B. Lever, Culworth. Honorary certificates, H. Mitchell, Cambridge; and Jas. H. Coveney, Stilton.

*Practical Midwifery*.—Prize, Thomas Taylor, Witney, Oxford. Honorary certificate, John Henry Wise, Banbury.

*Botany*.—First prize, John Henry Wise, Banbury; second prize, Thomas J. Austin, London.

\* We have arranged them alphabetically.

*Forensic Medicine.*—Prize, William Martindale, London.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL.

The Rev. G. H. BOWERS, B.D. Treasurer of the Hospital in the chair.

*Botany.*—Silver medal, R. C. Golding, London; certificate, Elisha Noyce.

*Midwifery.*—R. C. Golding.

WINTER SESSION, 1841-2.

*Exhibition of £15. per Annum.*—John Terry, Bath.

*Medicine.*—Michael Teevan, Princes Row, Kennington.

*Surgery.*—Senior class, first prize, John Moore, Wickham Market, Suffolk; second prize, Arthur Taylor, Nether Crawley, Luton, Beds. Junior class, first prize, J. Terry; second prize, W. M. Neale, Walworth.

*Midwifery.*—Senior classes, students of two sessions, 1, M. Teevan; 2, R. C. Golding. Students of one session, 1, John Moore; 2, W. M. Neale. Junior class, T. F. May, Butcher Row, Ratcliffe Cross.

*Physiology.*—Senior class, equal, R. C. Golding, John Moore. Junior class, E. Noyce.

*Practical Anatomy.*—Senior class, first prize, James Yate, Madeley, Salop; second prize, John Moore. Junior class, first prize, J. Terry; second prize, G. F. Burroughs, Shepton Mallet.

*Chemistry.*—First prize, E. Noyce; second prize, W. Ackland, Stawell, Somerset.

*Materia Medica.*—First prize, M. Teevan; second prize, E. Noyce.

*Diligence and Good Conduct.*—First prize, J. Terry; second prize, G. F. Burroughs.

GUY'S HOSPITAL MEDICAL SCHOOL.

Saturday, May 7, 1842.

Dr. BRIGHT, F.R.S. in the chair.

*Medicine.*—First prize (gold medal), J. Vincent, Bedford; second prize (silver do.), J. H. Browne, Southton.

*Materia Medica.*—Second prize (silver medal), H. J. Fotherby, London. Certificate, J. F. Wills, Crewkerne.

*Chemistry.*—First prize (books), George Ayton, Kenilworth. Certificates, T. P. Ramskill, Clapham; J. C. Fotherby, London; J. C. Forster, London.

*Practical Chemistry.*—Prize, Edward Garraway, Feversham.

*Anatomy: Senior Division.*—Equal prizes (instruments), H. M. Webb, Barnstaple; H. W. Watson, Newcastle.

*Junior Division.*—Equal prizes (instruments), J. T. Caddy, Bideford; H. A. Oldfield, London. Certificate, C. E. Pratt, Appledore.

*Pathological Anatomy.*—Prize (silver medal), W. W. Kershaw, Clapham.

*Surgery.*—First prize (instruments), C. A. Aiken, London. Certificates, H. W. Watson, Newcastle; P. W. Thompson, Brentford.

*Ophthalmic Surgery.*—Prize (silver medal), Caleb Rose, Swaffham.

*Midwifery: Senior Division.*—First prize (instruments), Caleb Rose, Swaffham. Certificate, Mr. A. C. Ayres, Ramsgate.

*Midwifery: Junior Division.*—Prize (instruments), James Vincent, Bedford. Certificate, Mr. H. W. Watson, Newcastle.

*Practical Midwifery.*—Certificates, Martindale Ward, Reading; W. H. Pettigrew, Woolwich.

*Botany.*—Equal Prizes (books), H. M. Webb, Barnstaple; Geo. Ayton, Kenilworth.

*Medical Jurisprudence.*—Prize (books), Walter Clegg, London. Certificates, J. Mills, Exeter; Mr. W. Chapman, Tooting.

*Medical Physics.*—Prize (silver medal). J. N. Watson, Newcastle.

The diploma of the Physical Society granted to Drs. E. L. Birkett, D. J. T. Francis, and J. B. Nevins; and Messrs. J. R. Bedford and J. C. Parrott.

*Clinical Report Society.*—Medical certificate, — Browne, Southton; surgical certificate, Alfred Poland, London.

*Pupils' Physical Society.*—Prize (instruments), Walter Clegg, London.—This prize is awarded for the best essay on a given subject.

KING'S COLLEGE MEDICAL SCHOOL.

Friday, May 6, 1842.

The Lord Archbishop of CANTERBURY in the chair.

*Medical Scholarship (£40 a-year).*—Scholar elected, Mr. George Johnson; prize to Mr. Inman.

*DIVISION I.—Medicine, Surgery, and Midwifery.*—First prize, George Johnson; second prize, John Percival. Certificates of honour: Henry J. Hunter, Robert W. Woolcombe, J. G. Grylls.

*DIVISION II.—Materia Medica and Physiology.*—First prize, William Henry Parsey; second prize, Alfred B. Andrews. Certificates of honour: S. A. Steele, Thomas Hawksley.

*DIVISION III.—Anatomy and Chemistry.*—Second prize, B. L. Jemmet. Certificates of honour: Caleb Barrett, R. Roberts.

*Botany.*—Prize, John Baxter Langley. Certificates of honour: M. S. Todd, J. H. Blount, S. H. Steele, H. S. Lyford.

*Forensic Medicine.*—Prize, R. P. Dodd. Certificates of honour: John Percival, Evan Thomas, C. W. Mann.

*Comparative Anatomy.*—Prize, Alfred C. Barker.

**Medical Society's Prizes.**—First prize, George Johnson; second prize, John Baxter Langley.

**Warneford Prizes.**—First prize (gold medal, value £10, and books value £15), George Johnson; second prize (gold medal, value £5, and books value £10), George P. Atkinson.

**Leathes' Prizes.**—First prize (quarto Bible), Frederick J. Hensley; second prize (quarto Prayer-book), Boughton Kingdon.

**Medical Associates.**—George Johnson, Boughton Kingdon.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.

Thursday, April 21, 1842.

JAMES ARNOTT, Esq. in the chair.

**Anatomy.**—Prize, C. E. Hatherly. Certificate, John Crawley.

**Physiology.**—First prize, Henry Greaves; second prize, Thomas Graham. Certificate, W. Hoblyn.

**Practical Anatomy.**—First prize, T. S. Smyth; second prize, C. W. Smith. Certificates, A. Peat and — Broadbent.

**Practice of Medicine.**—First prize, T. Graham; second prize, — Nisbit; third prize, — Baker. Certificates, — Walker and W. Hoblyn.

**Surgery.**—Prize, A. Peat. Certificate, T. S. Smyth.

**Midwifery.**—First prize, R. D. Ward; second prize, T. S. Rising. Certificates, — Baker and — Walker.

**Chemistry.**—First prize, C. R. Morgan. Certificate, J. Stephens.

**Materia Medica.**—Prize, C. R. Morgan. Certificate, J. Stephens.

**Forensic Medicine.**—Prize, H. Greaves. Certificate, — Taylor.

**Botany.**—Prize, Charles R. Francis. Certificate, Thomas Rising.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

Monday, April 25, 1842.

MR. SERJEANT THOMPSON in the chair.

**Clinical Medicine.**—Prize, Robert Webb Watkins. Honorary certificate, Samuel Hallet Griffith.

**Clinical Surgery.**—Prize, Robert Barnes.

**Practice of Physic.**—Prize, Edward Bullock. Honorary certificate, Robt. Frith Jarvis.

**Surgery.**—James Dunn.

**Materia Medica.**—Prize, William Spackman. Hon. certificate, Walter Haldenby.

**Anatomy.**—Senior prize, George Sayle. Honorary certificate, A. G. Field.

Junior prize, Thomas Clark. Honorary certificate, — Kingsley.

**Midwifery.**—Prizes, Robert Frith Jarvis and Henry William Fuller. Honorary certificates, John Baber, S. H. Griffith, and Edward Tegart.

**Botany.**—First prize, S. H. Griffith; second prize, F. S. Tate. Honorary certificate, — Griffin.

UNIVERSITY COLLEGE MEDICAL SCHOOL.

Saturday, April 30, 1842.

The Right Hon. Lord CAMPBELL presided.

**Anatomy and Physiology.**—Gold medal, Henry Fearnside, of Otley, near Leeds; silver medals, equal, George Y. Heath, Henry James Stokes, of London.

**Midwifery.**—Gold medal, William John Preston, of London; first silver medal, A. B. Garrod, of Ipswich; second silver medal, Edwin Hearne, of Taunton.

**Chemistry.**—Gold medal, B. A. Harling, of Chester; first silver medal, Thomas Humphreys, of Anglesey; second silver medal, W. Brown, of Altarnun, Cornwall; prize essay, first medal, Richard Tudor, of London; ditto, second medal, Richard Worsley, of Blandford.

**Anatomy.**—Gold medal, H. Fearnside; first silver medal, Edwin Hearne; second silver medal, J. Thompson, of Launceston; junior class silver medal, Alfred Jackson, of London.

**Comparative Anatomy.**—Gold medal, T. P. Matthew, of London.

**Materia Medica.**—Gold medal, R. D. Harling, of Chester; first silver medal, R. Worsley; second silver medal, W. Edwards, of Carephilly.

**Surgery.**—Gold medal, Edwin Hearne; first silver medal, J. Topham, of Droitwich; second silver medal, Leonard Buckell, of Chichester.

**Medicine.**—Gold medal, A. B. Garrod; first silver medal, P. H. Williams, of Wem; second silver medal, H. Allen, of Macclesfield.

**Fellowes' Clinical Medals.**—Gold medal, C. J. Hare, M.B. Cantab. of Leeds; silver medal, Thomas Leonard, of London.

SUMMER TERM, 1841.

**Botany.**—Gold medal, W. J. Preston; silver medals, equal, J. E. Stocks, of Hull, and J. D. Heaton, of Leeds.

**Medical Jurisprudence.**—Prize, A. B. Garrod.

**Fellowes' Clinical Medal.**—J. D. Heaton.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

**Anatomy.**—First prize, Duncan Maclure, London; second do. Samuel Probyn, Monmouthshire; third do. Benjamin Longmore, London; fourth do. John Welch, Taunton; fifth do. Peter Clarke, Scotland.

**Physiology.**—S. Probyn, Monmouthshire.

**Materia Medica.**—First certificate, Sam. Probyn, Monmouthshire.

**Chemistry.**—First certificate, S. Probyn, Monmouthshire.



## PRESENTATION OF PLATE.

THE Committee of Officers of the Medical Department of the Army, appointed for the purpose of expressing to Mr. Guthrie their sense of the kindness and liberality with which he had placed his lectures and hospital instructions at their service for many years, delivered to him on Tuesday, the 10th of May, a service bearing the following inscription:—"To G. J. Guthrie, Esq. F.R.S. &c. &c. &c. this service of plate has been presented by three hundred officers of the medical department of the army, the companions of his early military services, or the pupils of his instruction. They desire to record by it their high sense of his liberal and distinguished conduct on every occasion, as well as to express their sincere affection and esteem."

## ROYAL COLLEGE OF SURGEONS.

## LIST OF GENTLEMEN ADMITTED MEMBERS.

*Monday, May 9, 1842.*

W. H. Carnegie.—S. N. Elliott.—H. Baillie.—W. Baillie.—J. Mills.—A. H. Godby.—J. H. Reynett.—R. D. Ward.—H. Gaskell.—H. Woodward.—J. Teare.—W. Murdock.

*Friday, May 13, 1842.*

J. T. La Presle.—A. Tulk.—C. Rose.—C. E. Prior.—R. Tilton.—J. W. Long.—W. Jollie.—A. M. Moger.—H. Hamilton.—J. H. Thornhill.

*Monday, May 16, 1842.*

E. Stone.—T. H. Barker.—T. P. Dennett.—R. L. Maddox.—W. H. Cane.—W. Brumfit.—F. Milne.—J. Gordon.

## APOTHECARIES' HALL.

## LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, April 28, 1842.*

P. P. Lattey.—W. Davies, Gloucester.—J. W. Davies, Gloucester.—W. Miller, Poole.—J. Thomas, Llanfraid, Cardiganshire.—G. A. Eddman, Addethorpe, Lincoln.—W. Williams, Mold, South Wales.—W. P. Stiff, Uley.—J. Graham, Brampton.—P. M. Pope, Town Malling, Kent.—F. Ingoldby, Louth, Lincolnshire.

*Thursday, May 5, 1842.*

G. W. Whateley, Great Berkhamstead, Herts.—E. Metcalfe, Foulmine, Cambridgeshire.—C. W. Mann, Killington, Yorkshire.—W. Druitt.—M. M. Bull, Cambridge.—W. C. T. Wagstaffe, 117, Long Lane, Bermondsey.—John Kilshaw Slater, Knutsford, Cheshire.—B. Kingdon, Ryde, Isle of Wight.—H. P. Haydon, Melbury Abbas, Dorset.—B. T. Hodge, Sidmouth, Devon.—R. Boley, Bristol.—F. M. Russell, Marlborough, Wilts.

*Thursday, May 12, 1842.*

T. R. Wheeler, 61, Gracechurch Street.—W. R. M. Griffin, Falmouth.—W. A. Leslie, Fal-

mouth.—T. Godfrey, Oxford.—J. G. Treacher, Borneo.—J. Nicholson, Hexham.—J. Walmsley Liverpool.—R. S. Donnell, Falmouth.—W. H. Sims, Birmingham.—A. Back, Norwich.—S. K. Scott, Wappenham, Northampton.—G. M. Humphry, Sudbury, Suffolk.—W. B. Tomkin, Witham, Essex.—E. F. Mecey, Newbury.—H. W. P. Davis, London.

## A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, May 7, 1842.

Small Pox .....	1
Measles .....	24
Scarlatina .....	7
Hooping Cough .....	26
Croup .....	12
Thrush .....	6
Diarrhoea .....	3
Dysentery .....	2
Cholera .....	0
Influenza .....	2
Typhus .....	19
Erysipelas .....	6
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	152
Diseases of the Lungs, and other Organs of Respiration .....	200
Diseases of the Heart and Blood-vessels ....	24
Diseases of the Stomach, Liver, and other Organs of Digestion .....	65
Diseases of the Kidneys, &c. ....	9
Childbed .....	10
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	3
Rheumatism .....	3
Diseases of Joints, &c. ....	4
Ulcer .....	2
Fistula .....	0
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	100
Old Age or Natural Decay .....	56
Deaths by Violence, Privation, or Intemperance .....	17
Causes not specified .....	2
Deaths from all Causes .....	756

## METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.*

May	THERMOMETER.		BAROMETER.	
Wednesday 11	from 35 to 61		29.95 to 29.98	
Thursday . 12	41	52	29.89	29.94
Friday . . . 13	37	62.5	29.98	30.04
Saturday . 14	35	63	30.00	30.22
Sunday . . 15	38	64	30.30	30.35
Monday . . 16	41	66	30.35	30.31
Tuesday . 17	38	61	30.24	30.14

Wind, S.E. and S. on the 11th; N. by E. N. and N. by W. on the 12th; W. by N. and S.W. on the 13th; S.W. on the 14th; N.E. on the three following days.

On the 11th, morning clear, evening cloudy. The 12th, cloudy, with rain in the morning. The 13th and following days, generally clear.

Rain fallen, .34 of an inch.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC.

*Delivered at King's College, London,*

BY DR. WATSON.

*Diseases of the liver. Acute inflammation. Abscess of the liver. Causes and treatment of acute hepatitis. Chronic hepatitis. Jaundice. Its symptoms, causes, and species.*

FROM the alimentary canal I go to the other organs directly or indirectly connected with the digestion and assimilation of our food. And, first, let us look at that large gland, the liver, of which the main office, as far as we can perceive, is the secretion of bile.

The liver is liable to various forms of disease: but it is not so frequently in fault as many would have us believe. It is often blamed most gratuitously and unjustly.

The researches of Mr. Kiernan, recently published in the Philosophical Transactions, have paved the way for a better understanding in future of its pathology. If I did not feel myself too much circumscribed by the remaining limits of this course of lectures, I should be glad to attempt to assist you in construing Mr. Kiernan's somewhat difficult, and very valuable paper. But doubtless you are made familiar with the anatomy of the organ, as described by him, in other lectures: and I must content myself with noticing, as we go along, one or two points, in respect to its morbid appearances, concerning which, before Mr. Kiernan took the subject up, great mistakes prevailed, even among the most celebrated pathologists.

I shall follow the usual order, and consider first, *inflammation* of the liver, which may be either acute or chronic.

These are, both of them, diseases that are much more common in warm climates than here.

756.—xxx.

Of well-marked acute hepatitis the symptoms are fever, with pain and a sense of tension in the right hypochondrium, inability to lie on the left side, difficulty of breathing, a dry cough, vomiting, hiccup.

You will not find all these symptoms present in every case: yet they are all worth attending to.

The pain is sometimes sharp and pricking, like a pleuritic stitch: sometimes dull and tensive. In the former case the peritoneal covering of the gland is supposed to be affected; in the latter its parenchyma. The pain sometimes extends to the right clavicle and to the top of the right shoulder. This circumstance was noticed by Hippocrates; and I have referred to it before as a good example of what are called sympathetic sensations. The existence of this pain makes it probable that the inflammation affects the convex surface of the liver. Occasionally the *left* shoulder is painful: the left lobe of the liver being involved in the disease. The pain in the right side is aggravated, often, by the movements of the diaphragm in respiration; and this explains the embarrassment of the breathing, and the short dry cough. Why the patient cannot well lie on the left side is obvious enough: all the connexions of the inflamed organ are then put upon the stretch by its weight. There are, however, some exceptions to this rule. On the under or concave part of the liver lies the pyloric extremity of the stomach; and that viscus often sympathizes with the hepatic inflammation: nausea and vomiting occur; and hiccup. The thoracic symptoms on the one hand, or the stomach symptoms on the other, may be expected to predominate, according as the convex or the concave surface of the organ is chiefly the seat of the inflammation.

The situation of the pain, the cough, the short and shallow breathing, used to puzzle the older observers: and they confess their occasional inability to determine whether the inflammation was situated in the lower lobe

of the right *lung*, or in the *liver*. But now-a-days we need have no difficulty in making the diagnosis. The ear will tell us, if we employ auscultation and percussion, whether the contents of the chest or of the belly are suffering: and my own experience has taught me that sharp pain, with feverishness, occurring in the debateable ground of the right side, denotes pleuritic inflammation far more often than it denotes hepatic.

*Jaundice* is an *occasional*, but by no means a *necessary* effect or accompaniment of hepatitis; whether acute or chronic: and, therefore, what I have to say of that symptom I shall give under a separate head.

Acute hepatitis may terminate in resolution; or it may terminate in diffused suppuration; or, what is more usual, in the formation of a circumscribed abscess, or of abscesses, in the liver. We do not often meet with hepatic abscesses in this climate; but they are very common in hot countries: and some of the most interesting events of the disease have relation to the progress of these collections of matter. When they approach the surface of the liver, adhesions generally take place (in virtue of that conservative principle of which we so constantly discern the working) between the diseased organ and the neighbouring parts. If no such adhesion occurred, the matter would at length burst into the cavity of the peritoneum; and this *does* sometimes happen. The peritonitis which is thus, suddenly, set up, is almost always fatal. I referred, however, in a former lecture to one instance in which it was recovered from. Sometimes the adhesion is effected between the liver and the parietes of the abdomen, and the abscess points *externally*, and may be opened by the surgeon. Such a case occurred in my neighbourhood last year. Sometimes the liver glues itself to the stomach, or to the intestines; and then the abscess breaks into the alimentary tube, the matter is evacuated by vomiting, or by stool: and all goes on tolerably well again. In other cases the agglutination is to the diaphragm, which is perforated, and the pus makes its way into the sac of the pleura, or through the lung to the bronchi, and so out by the mouth. I have seen three examples of this myself. In one the abscess originated in the formation and degeneration of hydatids in the liver; and the patient (a woman, she was under Dr. Macmichael's care in the Middlesex Hospital) spat up quantities of yellow fluid, consisting partly I suppose of pus, but chiefly of pure bile. The examination of the dead body ultimately demonstrated the nature of that case. The second of the three patients got well: yet I cannot doubt that, bating the hydatids, the disease was essentially of the same kind. It also occurred in a woman, whom I admitted into the hospital. She

was a kitchen-maid at the Thatched House Tavern in St. James's Street; and she had received a violent blow at the back part of the right hypochondrium. This was followed by pain there and by fever; and at length she began to have cough, dyspnoea, and expectoration. She brought up an abundance of frothy mucus of a bright yellow colour: not at all resembling the rusty sputa of pneumonia, but exactly of the tint which bile would give to it. At the same time large crepitation could be traced from the bottom to the top of the right lung. I fully expected that this woman would die: but by degrees the yellow expectoration ceased, all the auscultatory signs gradually disappeared, and she recovered perfectly.

It is plain that in such instances as this, there must be adhesion of the *lung* to the diaphragm also: but cases have occurred in which the matter burst into the cavity of the pleura, and presently destroyed the patient by suffocation.

The event of the third case is still *sub judice*. A gardener, 45 years old, was attacked, four weeks before he came under my care in the hospital, with severe pain in the right loin. Just at the edge of the short ribs, and not far from the vertebral column, on the right side, I found a large elastic swelling, very tender, and of a bluish red colour. As the patient's urine was most remarkably loaded with amorphous deposits, my first suspicions turned towards the kidney. It soon, however, became plain that, although the tumor was below the diaphragm, the parts above that muscle were involved in the disease. The right half of the thorax was dull to percussion; no vesicular breathing was audible there, but some scattered crepitation and bronchophony. Four days subsequently to his admission the patient began, during an effort of coughing, to discharge, almost in a stream, from his mouth, a considerable quantity of grey, pultaceous fluid, of the consistence of gruel, and horribly fetid. Altogether the amount of matter thus expectorated was estimated at two quarts. The pain then ceased; and the swelling was observed to be less. After three days more, it was deemed proper to puncture the tumor, and matter was let out having precisely the qualities of that which he had ejected through the mouth. The patient remained eleven weeks in the hospital, the expectoration becoming less unnatural, and the discharge from the abscess gradually diminishing. He then chose to depart. Some months afterwards he applied for re-admission, and again staid with us a week or two. His health had much improved during the interval: but the wound in his back was still open, and he still continued to expectorate somewhat: and yellow bile was frequently to be seen, both on the dressings

which covered the puncture, and in the vessel into which he spat. I think it probable that this man may eventually recover, at the expense, however, of a permanently damaged lung.

Rigors occurring during the progress of hepatitis should make us suspect that suppuration is taking place: if the pain is thenceforward mitigated, or exchanged for a sense of weight, and hectic fever sets in, we may be tolerably certain that pus has formed.

Of the several courses taken by an hepatic abscess, that towards the surface of the body is the most common; and it is the only one with which we are able to interfere. And the chief thing we have to look to, is not to interfere too soon. The adhesion of the inflamed organ to the wall of the abdomen is the indispensable condition, not of success only, but of safety, where the question arises of puncturing the tumor. Without such adhesion the pus will be transferred from the cyst to the cavity of the peritoneum; or if the abscess be not reached by the scalpel, that cavity will be laid open. Now it is not easy to ascertain whether there be adhesion or not. Certainly the operation ought not to be attempted until the parts above the abscess are very thin, and are verging to a point; and even then, unless there were some distinct purpose, besides that of saving a little time, some urgent distress or danger to relieve, I think such abscesses might be more prudently left to themselves. Dr. Gregory, of Edinburgh, used to mention a case in which, as fluctuation was palpable, and the tumor pointed, it was proposed to open it; but the patient died somewhat suddenly before the operation could be performed: and inspection of the dead body showed that no adhesion existed. Mr. Malcolmson has lately published, in the *Medico-Chirurgical Transactions*, two or three instances of a like kind. These are circumstances which teach us to be cautious about recommending the operation.

A case is recorded of the bursting of an hepatic abscess into the pericardium; another into the vena cava. Facts of this kind constitute mere medical curiosities, and have no practical bearing.

It is clear, both from the size of the organ and from its situation in the body, that an abscess in the liver can never be otherwise than gravely hazardous. Yet many recover from them. Much evidently depends upon the manner and direction in which the pus seeks a vent. The most desirable road for its exit is one which it sometimes takes, but which I have not yet mentioned. It occasionally flows out into the duodenum through the excretory ducts of the liver, when these happen to have been laid open by the suppurating process. Next to this we may hope for its discharge through the adhering pa-

rietes of the abdomen; next by a breaking of the abscess into the alimentary canal. The escape of the matter through the air-passages is fearfully perilous; and its entrance into the shut serous sacs, or into the great blood-vessels, almost necessarily fatal.

The causes of acute inflammation of the liver are principally those to which I have so many times had occasion to point: exposures to wet and cold, especially after the body has been submitted for a considerable period to the influence of a high atmospheric temperature. This opinion is the result of much experience collected by numerous observers of the disease in hot climates. But if you ask me for a reason why the liver gets thus ready to take on inflammation—why, when the inflammation is excited by cold, this organ in particular should be affected—I cannot give you one: any more than I can tell you why, under other circumstances, it is the throat, the intestines, or the lungs, upon which the inflammatory action fastens.

It was long supposed that injuries of the head had some peculiar and mysterious effect in producing suppuration of the liver. Hepatic abscesses, of small size, but several perhaps in number, are of frequent occurrence in the bodies of persons who have died of fracture of the skull. This particular fact has since been swallowed up in a more general one; viz. that collections of pus are common in various organs, and especially in the liver, as consequences of *phlebitis*, or of the entrance of pus into the veins from a suppurating wound.

Acute hepatitis requires vigorous treatment in the outset. Our object is, if possible, to prevent suppuration. Blood should therefore be freely taken from the system by venesection, and from the neighbourhood of the inflamed part by leeches. I will not weary you by going over the old ground that we have so often trodden already, nor repeat observations which have been many times made respecting the methods, and the requisite amount, of this great antiphlogistic remedy. Depletion of the portal vessels may also be indirectly obtained by purgatives; especially by such purgatives as produce copious and watery stools. The neutral salts are therefore proper in this disorder. It may be, as some suppose, that they operate beneficially, as counter-irritants, upon the duodenum; but their effect in draining the veins that feed the vena portæ, and thereby relieving the hepatic congestion, is more obvious and more intelligible. These saline medicines should be much diluted; and their action may be quickened, if that be necessary, by adding the infusion of senna.

After blood-letting has been duly performed, and the force of the inflammatory action has been broken, blisters may be applied to the right hypochondrium: and I

believe that repeated blistering is more serviceable than a single blister kept open by savine ointment.

Some difference of opinion prevails among medical men in regard to the employment of mercury in the *onset* of acute hepatitis. I cannot pretend to offer you the results of my own observation on this point, but I find that the best authorities, among those who have had to treat the disease in hot climates, are *against* its use at the *very first*, as being stimulating to the liver. I suspect that this is a piece of theory: but at all events, after the first violence of the inflammation has abated, that remedy is not to be omitted, either in the acute, or in the chronic form of the disorder, to be mentioned presently: only in the one case it should be so administered as to affect the system as speedily as possible; in the other it is to be introduced with a slowness which bears a proportion to the pace of the disease.

When suppuration has taken place, or is unavoidable, when the patient ceases to complain of pain, but has in its stead a feeling of weight in the hypochondrium, and becomes distinctly hectic, a corresponding change must be made in the treatment. Active depletion is no longer admissible; you must sustain the strength by a more nourishing diet, and prescribe some tonic remedies; the sulphate of quina, with sulphuric acid; or the nitro-muriatic acid, which enjoys a considerable repute, greater perhaps than it merits, for the relief of liver complaints.

Acute inflammation of the liver is apt to degenerate into *chronic*. Chronic inflammation may also arise under the circumstances that give birth to the acute form. Chronic hepatitis, again, is not unfrequently produced by the presence of specific disease in the liver, of what is called carcinoma; of scrofulous tubercles. Melanosis, and hydatids are both of them of common occurrence in the same part; and they may give rise to symptoms, or they may not: and when these morbid conditions do declare themselves by external signs, those external signs are very much the same as belong to chronic hepatitis. The precise diagnosis is exceedingly obscure; the symptoms point distinctly to the liver as the *seat* of the disorder; but as to its exact *nature*, we must often be content with probabilities alone.

The symptoms of chronic hepatitis—or of the chronic forms of disease to which I have alluded, when they show themselves by symptoms—are (I give you them in Cullen's words) "some fulness and some sense of weight in the right hypochondrium; some shooting pains felt at times in that region; some uneasiness or pain felt on pressure in that part; some discomfort from lying upon

the left side; perhaps some degree of jaundice; and sometimes a certain amount of fever combining itself with more or fewer of these symptoms." In short, they are just the symptoms of acute hepatitis occurring in a minor degree.

Chronic affections of the liver are sometimes attended with an *increase*, and sometimes with a *diminution*, of its size. When it is augmented in bulk, its place and enlargement may be ascertained by palpation and percussion; nay the magnified gland may sometimes be seen, extending beyond its proper situation in the hypochondrium, and passing far down into the abdomen. I have known the liver reach to the right groin: and when its left lobe is affected, it will sometimes stretch across towards the lower part of the left side of the belly. On the other hand the liver may shrink into a much smaller space than it naturally occupies. These small livers are usually hard. Interfering more with the portal circulation than many enlarged livers do, they are more frequently attended with dropsy of the peritoneum.

The "hobnail" liver, the *cirrrose* of modern French writers, is nodulated as well as hard. The irregularity of its surface may be so great as to be perceptible to the touch. I fully described this condition of the liver when I was upon the subject of passive ascites, of which it is the most common cause.

I mentioned also, some time ago, the "fatty" liver, so frequently found associated with pulmonary consumption. The liver in this state is soft, enlarged, smooth on its surface, and of a buff or tawney colour throughout. Mr. Bowman has lately shown that these changes are owing simply to the unwonted abundance of certain small granules of fat, of which, in the healthy organ, each lobule contains a few only. If in a phthisical patient we find the liver palpably enlarged, we may guess that it is encumbered with this interstitial fat: but there are no symptoms peculiar to the fatty liver. As to its cure, we are quite helpless: and the same may be said of the hobnail liver, as well as of all those forms of disease in which the organ is loaded with specific deposits.

Dark masses of extravasated blood are sometimes found interspersed through this gland, and then, by an absurd perversion of language, the patient is said to have had "apoplexy" of the liver.

The same causes which produce acute hepatitis, acting in a less intense degree, will excite chronic inflammation of the same textures. Intemperance also, and particularly the habitual and excessive use of alcoholic liquors, certainly tends to generate hepatic inflammation, especially in its more chronic form. We see this even here, and it is still



more strikingly perceptible in warm climates, as you may learn by reading the works of those persons who have had experience of the diseases of India. Dr. William Ferguson, for example, who was for some time chief of the medical staff of the windward and leeward islands in the West Indies, observed that there was a regular increase and aggravation of these chronic affections of the liver among the troops after they received their monthly pay, when they drank great quantities of ardent spirits; arrack in the East Indies, and rum in the West.

There has long been supposed to be what is called a *gin-drinking* liver, in which a section of that gland presents an appearance very closely resembling the section of a nutmeg; and a good deal of useless speculation has been employed as to the nature of the change which has taken place in such cases. Mr. Kiernan has clearly shown that the nutmeg aspect of the liver is produced by mere congestion of blood. Congestion of the liver is, indeed, very likely to arise under the daily stimulus of distilled spirits, but it arises under various other circumstances besides; and therefore it is no safe test of the intemperate habits of the party. And of this we had sufficient evidence before Mr. Kiernan's observations were published. Again and again have I met with the nutmeggy liver, strongly marked, when there was reason to believe that the possessor of it had never transgressed the strictest rules of temperance in drinking: in young persons, for example, of both sexes, who certainly never had been dram-drinkers. Disease of the heart is a very obvious, and a very common cause of hepatic congestion.

You are aware that the congestion occurs under two forms, according as the branches of the hepatic vein, or of the vena portæ, are gorged. If both these sets of vessels are full, the liver is universally red. If the hepatic vein alone be the seat of the congestion, then in the centre of each lobule we see a red speck, surrounded by yellowish matter; the specks are isolated, the yellow colour is arranged in a sort of net-work. Whereas, if the portal system be greatly engorged, the red streaks will be continuous, and the yellow portions hemmed in by them, and isolated. I show you these distinctions in some specimens prepared by Mr. Kiernan himself.

I should have stated, when speaking of the signs of chronic hepatitis, what is singularly true of chronic liver affections in general, that they are apt to be attended with much languor and lassitude, and a remarkable depression of spirits; and with that sort of dread, and apprehension of impending evil, which I mentioned as being a striking feature of hypochondriasis: the very derivation of which term marks its frequent

connexion with hepatic disorder. There is sallowness of the complexion also; and sometimes emaciation.

The same remedies are adapted to the chronic as are proper for the acute inflammation of the liver: the comparative mode of their exhibition however differs somewhat.

Blood-letting is not often necessary or advisable, except when more violent aggravations than usual of the inflammatory symptoms supervene. Topical bleeding, and blistering, are more expedient.

But the two main remedies to be tried in this complaint are mercury, and the saline purgatives, given in small doses, and repeated for a long time together. Five grains of blue-pill every night, or every night and morning; and as much of the sulphate of magnesia as will produce one or two watery stools every day, for weeks, perhaps, together. Patients are not so well content to bear this discipline when it is administered in boxes and phials, *as physic*; but they have more faith in the natural mineral waters: so that a residence at Cheltenham, or some such place, is exceedingly proper to be recommended in these cases; where the daily use of the waters may keep up a continual drain on the system of the vena portæ; and where the relaxation from business, the amusements that are constantly going on, the change of scene and of society, may contribute to dissipate the hypochondriacal feelings which are so apt to render the subjects of chronic hepatic disease supremely wretched.

Moderate exercise, in the open air, on horseback and on foot, should be encouraged. There is no doubt that hepatic as well as gastric derangements are fostered by sedentary habits. Tepid bathing is another expedient from which benefit may be hoped. In many instances it will be proper to make trial of Scott's nitro-muriatic bath.

*Iodine* has been thought of much use in certain kinds of hepatic disease; in those kinds especially which are connected with enlargement of the viscus. The iodide of potassium; or a mixture of the iodide and of iodine; or some of the combinations of iodine and mercury; may be given in such cases: or the *unguentum iodini compositum*, or the *unguentum hydrargyri iodidi*, of the Pharmacopœia, may be rubbed night and morning upon the hypochondrium. I have not seen much benefit from these forms of medicine myself, in such cases; but they are said, by persons of experience and credit, to have been successful in their hands.

*Taraxacum* is also a drug which has been much employed in liver complaints since Dr. Pemberton's book on the diseases of the abdomen was published; but it is very doubtful, in my mind, whether it ever does much good. The Germans are very fond of

giving the *muriate of ammonia* in small and frequent doses. They have the same belief in the virtues of this salt, in various disorders, as the English practitioners have in those of mercury; and what is curious, they attribute to it some specific agency upon the functions of the *liver*.

In the account which I have now given of the principal diseased conditions of the liver, I have not included, nor dwelt upon, all the changes of structure and appearance to which that organ is liable. There are various conditions which disclose themselves by no intelligible symptoms during life, of which the nature has not yet been determined, and of which the cure still remains to be discovered. At this advanced period of the course, and with no time to spare, I do not think it necessary or right to trouble you with the unprofitable discussion of matters that are not strictly practical.

I have mentioned *jaundice* as an occasional symptom both of acute and of chronic inflammation of the liver. But jaundice is spoken of, in general, as constituting, itself, a distinct form of disease. If we consider it in that light, its diagnosis is most easy. We have only to look upon our patient to know what is the matter with him. But jaundice depends upon various and very different morbid conditions; and looking to those conditions as the true objects of diagnosis, we find that the real nature of a given case of jaundice is often involved in very great obscurity.

Let us first consider the constituent features of jaundice, whether it be regarded as a *disease* or as a *sign of disease*. They are, yellowness of the skin and of the eyes; whitish *fæces*; urine having the colour of saffron, and communicating a bright yellow tinge to white linen.

The characteristic yellow hue is owing, no doubt, to the presence of bile, or at any rate of the colouring matter of the bile, in the circulating blood. And the deep tint of the urine is evidently derived from the same source. On the other hand, the paleness of the *fæces* is to be ascribed to the want of bile, which always exists in healthy and natural excrement. This last symptom is not, however, a constant one; there may be jaundice while bile appears in the stools. I shall explain how this is supposed to happen presently.

It has been made a question how the bile, or its colouring matter, comes to be visibly present in the blood, or rather in many of the tissues supplied by the blood, and in several of the other fluids of the body. The general opinion, and probably the true one, is, that the bile, after being secreted in the liver, is reabsorbed, and carried into the circulation, and so conveyed to the surface,

and to the parts in which the change of colour is observed. This explanation is consistent with all the phenomena which we notice in the disorder.

But another theory has been broached on this subject; first, I believe, in this country, by Darwin. It has been more recently revived by M. Chevreul, who is followed by Mr. Mayo. These pathologists are of opinion that the bile is formed, not by the liver, but in the blood: that the office of the liver is to strain off or withdraw the bile from the circulation, constantly, as fast as it is formed; just as the perpetual elimination of urea from the blood appears to be one great purpose of the kidneys. They hold, therefore, that jaundice manifests itself whenever the due separation of the bile from the blood is suspended or imperfect. Failing of its natural vent, this peculiar substance accumulates in the blood, seeks other outlets, is deposited in various places, and, in fact, partly escapes through unaccustomed channels. They speak of jaundice as a symptom of *suppression* of bile, while others consider it as a sign of *retention*; using these words, suppression and retention, in the sense in which they are applied to the secretion of urine. They maintain that the proper function of the liver, the abstraction of bile from the blood, may be arrested by alterations of the substance and structure of that gland; or by the obliteration or obstruction of the gall-bladder or ducts, impeding or forbidding the removal of the bile already formed; or by some obscure influence of the nervous system upon these organs. They introduce the last kind of cause with the view of explaining those cases, which certainly occur, in which jaundice is the result of severe bodily pain or strong mental emotion. Nay, on their supposition, we might even suppose that the yellowness is sometimes due to a spontaneous and unwonted *abundance* of the elements of bile in the blood: in which case we need not wonder that jaundice should go along with perfect integrity of the biliary apparatus.

The advocates of the first mentioned supposition are aware of the difficulties opposed to its reception, by the occasional absence, even in cases of well-marked jaundice, of all disease or apparent obstruction to the excretion of the bile. They shew that in very many cases there is some obvious mechanical obstacle to the efflux of the secreted fluid: and in those instances in which none can be discovered after death, they conceive either that the ducts of the liver had been temporarily plugged up by inspissated bile, or a sort of biliary sand—or that they were closed, for a time, by spasm—or by some morbid condition of the duodenum.

Now of these two hypotheses, that which ascribes the yellowness to the reabsorption

of the secreted bile, is, to my mind, the most probable and the simplest: and I cannot see that it is attended with *more* difficulty than the other. But you may choose for yourselves between them: and I pass from this digression to a somewhat closer examination of the principal circumstances noticeable in the complaint. Its technical appellation, I should observe, is *icterus*, which is a Greek name for a bird with a yellow plumage, the galbula, or golden thrush; the sight whereof, by a jaundiced person, was death (Pliny tells us) to the bird, and recovery to the patient. Various other terms have been applied to the disorder, most of them having reference, like jaundice itself (from the French *jaune*), to the unnatural colour. *Morbus arquatus*, from its exhibiting some of the bright hues of the rainbow; *aurigo*, from its resembling gold; and we hear the common people say, now-a-days, such a one is as yellow as a guinea. The Latins spoke of it also under the title of *morbus regius*: why they so called it we learn from the following curious passage in Celsus, giving an account of the pleasant regimen, fit for Royalty itself, to be adopted by those who labour under the malady. “Per omne vero tempus utendum est exercitatione, frictione: si hiems est, balneo; si æstas, frigidis natationibus; lecto etiam et conclavi cultiore, lusu, joco, ludis, lasciviâ, per quæ mens exilaretur: ob quæ regius morbus dictus videtur.”

The whiteness of the stools I have mentioned as being a very common but not a constant appearance. It clearly depends upon the absence of bile. But sometimes there is bile in the discharged fæces, and at the same time the yellow colour of the skin and eyes. This probably depends upon the circumstance that some branches of the hepatic ducts are obstructed while the others are free; and thus the bile that is secreted is, in part, reabsorbed into the blood, and in part carried off into the intestines. In a former lecture I stated that one of the uses of the bile appeared to be that of stimulating the bowels to action: it is the natural purgative. Accordingly, in most cases of jaundice, the bowels are costive. But neither is this uniform. In some of the worst cases, wherein the jaundice depends upon hepatic disease, which is connected with disease also of the mucous coat of the intestines, there is constant diarrhoea.

In some instances the yellowness of the skin is at first attended with itching, which is occasionally so intolerable as to require the employment of opiates to allay it. In most cases there is no itching at all. The bile never fails to appear in the urine, which is in itself dark, and when collected in considerable quantity in a deep vessel, even *black*; and which tinges any white substance that is dipped into it of a bright yellow.

The urine which thus sometimes seems black, may be proved to derive that appearance merely from concentration of the yellowness, by pouring a little of it into a shallow white dish, or by diluting it with water; when the brilliant yellow tint will become manifest. Bilious sweat sometimes occurs, staining the patient's linen yellow. The saliva, in some jaundiced persons, has the same yellow tinge, and a distinctly bitter taste. It has been said that the milk of women who are nursing is made yellow in this disorder. Dr. Heberden, however, states that he never witnessed this; and he had known a woman with a very deep jaundice upon her, suckle her infant for six weeks together with no apparent bad effects upon its health. One man assured him that his tears were yellow. You are aware of the vulgar notion, that to a jaundiced eye all things appear yellow. Lucretius seems to have been the first to mention this:—“*Lu-rida præterea fiunt quæcunque tuenter Arquati.*” Heberden was disposed to regard this as being a mere poetical fiction. But certainly it is sometimes, though very rarely indeed, the fact. Two women, whom he considered however to be of little credit, told Heberden that objects appeared yellow to them. I have been assured of the same thing by a medical man who experienced it in his own person. If I do not mistake, Dr. Mason Good saw all things yellow when he was jaundiced. Dr. Elliotson has had some very interesting cases of this phenomenon. One of his icteric patients declared that objects seemed yellow when looked at with one eye, but not with the other; and in the eye that perceived the yellow tint he observed two large red vessels running towards the cornea. And in one or two instances, which he met with afterwards, of yellow vision with both eyes in jaundiced patients, he found inflammation, or distended blood-vessels in both eyes. This very morning I saw in the hospital a patient of Dr. Wilsoff, a middle-aged woman, affected with jaundice. She affirms that all objects seem yellow to her vision. In both eyes there are several varicose and singularly tortuous vessels, proceeding across the sclerotica towards the cornea, and some of them reaching its margin. It seems probable therefore that the ophthalmic vessels, in their natural state, do not permit the colouring matter of the bile to pass through them; but that when they become enlarged by disease, so as to admit the colouring particles of the blood, they may also give a passage to the yellow colouring matter, which tinges the humours of the eye: and in that case the objects seen through the yellow fluids would appear like those viewed through a piece of yellow stained glass. This is a point which is worth your attention in future.

The shades of yellowness are different in

different patients. Those who are pale and fair present a bright lemon colour. But in those who are florid, or whose cheeks and skin are flushed with fever, the tint will more resemble that of the Seville orange. Again, if the patient be naturally swarthy, or if his visage is livid or dusky through imperfect arterialization of his blood, the superaddition of jaundice will give him a greenish hue. These differences result from natural or acquired differences of complexion, antecedent to the icterus. But sometimes the bile that is reabsorbed is vitiated and dark; and we may have, as Dr. Baillie has pointed out, cases of green or black jaundice from that cause. You will remark that from whichever cause the green or dark colour arises, whether from a mingling of the yellowness of the bile with the blueness of lividity, or from the circulation of green-coloured bile, such cases are especially unpromising cases.

Icterus depends, as I have said, upon various and different internal causes: and frequently we cannot determine at all, until death affords us the means of inspecting the parts concerned in its production, what the precise exciting cause may be; even when it is simply mechanical. Any kind of pressure made upon the excretory ducts of the liver will produce it: and such pressure may be exercised by tumors seated in the liver itself; or by a scirrhus pylorus; or by specific disease situated in the head of the pancreas, of which I have seen several examples; or by a diseased condition of the duodenum: and these possible causes of a detention of the bile in its receptacle should always be borne in mind when we are investigating an obscure case of jaundice.

The impediment, in the cases just supposed, is external to the ducts; but they may be obstructed within, plugged up by inspissated bile, or by a biliary calculus. This forms one of Cullen's species of icterus—the *icterus calculosus*. The concretion is most commonly situated, I believe, in the ductus choledochus; sometimes, however, in the cystic, and sometimes in the hepatic duct. The pain that attends the passage of a gall-stone through these ducts is often dreadful. Perhaps there is no pain to which the body is subject that is more severe. You will not wonder at this, when you consider that through a tube, of which the natural size scarcely exceeds that of a goose-quill, there sometimes passes a stone as big as a walnut. The common duct has been found so dilated as readily to admit one's finger. Cullen's definition of this species is "*Icterus, cum dolore in regione epigastrica, acuto, post pastum aucto, et cum dejectione concretionum biliosarum.*" Now the last of these circumstances, the voiding of biliary calculi by stool, may happen over and over again, without its being noticed, and it does not

help us at all to judge of the nature of the complaint at its commencement, while the gall-stone is still in the ducts. With the pain, which is not constant, but comes and goes, there is much nausea and vomiting; and sometimes hiccup; and the matters vomited are usually very sour. The patient is flatulent, and dyspeptic; languid, and gloomy. At length the concretion passes into the intestines; the pain suddenly ceases, and all is soon well again. Attacks of this kind, having happened once, are very apt to be repeated.

Now this pain you might readily mistake for the pain of inflammation, were it not marked by these two circumstances—the absence of tenderness, and the absence of fever. Pressure, instead of augmenting, usually mitigates it. The patient keeps his hand firmly applied to his epigastrium; or rests, perhaps, the weight of his body upon some hard substance placed beneath his stomach. I speak now of the beginning of the attack, before there has been much retching; for a degree of tenderness of the abdominal muscles is often produced by repeated straining and vomiting. The pulse is unaffected, or I should rather say it is not accelerated, during the pain: occasionally it is even slower than natural, and the skin cold. Though there be no inflammation, rigors may occur; just as they sometimes happen when a solid substance—a bougie to wit—is passed through, and distending the *urethra*.

Nevertheless, inflammation does sometimes arise, and then the pulse becomes frequent, and the skin hot, and thirst and headache are complained of, and the epigastrium is tender; and if blood be drawn it exhibits the buffy coat. Sometimes the gall-stone makes its way, by ulceration, through the contiguous structures, and is so discharged outwardly, or into the bowels. In such cases there must have been inflammation.

As jaundice often occurs without any pain, so a gall-stone may enter and pass through the ducts, and produce pain, when there is no jaundice. The cystic duct alone may be blocked up, and that portion only of the bile be prevented from escaping which is accumulated in the gall-bladder. It is probable that re-absorption of the contents of that cistern is not very active. Or a calculus of an angular shape may stick in the common duct, and thus impede, without entirely stopping, the egress of the bile. Dr. Heberden thought that gastrodynia was not unfrequently owing to biliary concretions: founding his opinion upon the fact that many persons suffer, for months or years, under occasional attacks of epigastric pain, which is at last associated with jaundice. But after all, this might happen from progressive disease in the stomach itself;



and it is a pity that Dr. Heberden's views were not fortified by dissections.

When once a large calculus has forced its way through the natural channels of the bile, they remain permanently dilated; and smaller stones may be afterwards voided without pain or other notice of their passage. There are persons who get rid of scores of them in this way, during the course of their lives.

Sometimes a large concretion, after its extrication from the biliary passages, lodges in the more capacious intestines, and gives rise to serious obstruction there. I mentioned, recently, one case of this kind which had fallen under my own notice. But in general the concretions are expelled with the stools: and they should always be looked for. The patient is much gratified by seeing that his enemy has been expelled; and also by the proof he thus obtains of the sagacity and judgment of his physician. The *fæces* should be mixed with water, upon the surface of which any gall-stones, since they are specifically lighter than that fluid, will float. I never but once succeeded in thus catching a concretion in the evacuations of a patient, whose symptoms had led me to search for it.

We often find gall-stones, even in vast numbers, in the gall-bladders of persons who during their life time had never been known to suffer pain about the liver, or to have jaundice, or to exhibit any token of the presence of such concretions. We infer from this that, while they remain in the reservoir of the bile, they are harmless; and that the suffering and the hazard they occasion are mechanical consequences of their transit through the gall-ducts. I have heard of an instance in which upwards of 1300 gall-stones were taken from a human gall bladder after death.

These gall-stones are not, as you might suppose, mere lumps of inspissated bile. There are, I believe, concretions of that kind, but they are very rarely met with in the human subject. The ordinary calculi consist, in a great measure, of a peculiar substance, *cholesterine*, which exists in a state of solution in healthy bile, but which, in some morbid conditions of that fluid, being released from its solvent, assumes its proper crystalline form. Very little is known respecting the circumstances under which the change takes place. Cholesterine, Dr. Prout tells us, is the product of some modification of the oleaginous principle. Biliary concretions seldom form in children. They are much more common in women than in men. They occur most frequently in persons who are corpulent, and lead sedentary lives, and live well, and sleep much, and neglect their bowels: all which things foster or denote a torpid and congested state of the hepatic system. Cattle

are said to be subject to biliary calculi when shut up in stalls during the winter, and to lose the complaint when they are again turned out into the pastures in the spring. Hence the absurd notion, countenanced even by Van Swieten, that *grass* is a good remedy for jaundice.

Another variety of jaundice, also noticed by Cullen, is supposed to depend upon mere spasm of the gall-ducts. "*Icterus spasmodicus*, sine dolore, post morbos spasmodicos, et pathemata mentis."

Now the existence of this cause is hypothetical. The gall-ducts, though not distinctly muscular, possess a vital power of contraction. I am not aware that the disease has ever been clearly traced to a connection with "*morbi spasmodici*." It is an alleged cause which we can neither prove nor disprove. Certainly the "*pathemata mentis*" play their alleged part: fits of anger, and of fear, and of alarm, have been presently followed by jaundice: and it has also been produced by great bodily suffering, by a severe surgical operation, or, perhaps, by the dread which attended it. Mr. North witnessed a case in which an unmarried female, on its being accidentally disclosed that she had borne children, became in a very short time yellow. A young medical friend of mine had a severe attack of intense jaundice, which could be traced to nothing else than his great and needless anxiety about an approaching examination before the Censor's Board at the College of Physicians. There are scores of instances on record to the same effect: and *this* is observable of such cases, that they are often fatal, with head symptoms: convulsions, delirium, or coma, supervening upon the jaundice. But with respect to the immediate cause of the icteric symptoms, they may, I say, depend upon a spasmodic constriction of the gall-ducts. Mr. Mayo has suggested another cause, viz. the sudden formation of bile in unusually large quantity in the blood, by some influence propagated through the nerves.

Jaundice sometimes supervenes upon violent and long-continued vomiting; in which case the extremity of the gall-ducts is supposed to have been compressed by the coats of the duodenum.

Jaundice may also occur, as I stated before, as a symptom of acute or chronic inflammation of the liver; and then its treatment will merge in that of the primitive disease that has given rise to it.

Icterus occasionally comes on during pregnancy; and disappears after child-birth. The pressure of the gravid uterus may thrust other organs, a loaded colon for example, against the liver, and so impede the passage of the bile. The little exercise that pregnant women are apt to take, and the costive-



ness that frequently attends their condition, may have some influence in causing the *icterus gravidarum*.

All systematic writers follow Cullen in making jaundice a common disorder among newly-born children. The *icterus neonatorum* comes on, they say, a few days after birth; is not attended with any suffering, or obvious disturbance of the bodily functions; and soon disappears. Now there seems reason to believe that this is not icterus at all; and has no relation to the biliary organs. The surface of the infant, at its birth, is frequently of a deep-red, from hyperemia or congestion of blood; presenting a condition which falls little short of a mild but universal bruise. By degrees the redness fades, as bruises fade, through shades of yellow into the genuine flesh-colour. Such, I am assured by those who are more conversant with these matters than myself, is the pathology of the *icterus infantum*. Of course true jaundice may, as well as most other complaints, befall the earliest period of life; but I conceive that it seldom does.

The prognosis in jaundice is generally favourable; except when it depends upon structural disease of the liver, or supervenes suddenly upon some great mental or bodily shock. In both these cases the prognosis is bad, or doubtful. It is better, in that variety connected with hepatic disease, if the disease proceeds from some known cause, by which a low degree of inflammation has been produced; and the cause is such as can be avoided for the future. Just, indeed, as in chronic hepatitis, of which the icterus is simply an occasional symptom. The prognosis is worst of all in old persons, when the constitution is impaired, and there is no obvious cause for the disease; and particularly when the colour of the skin is greenish, or approaching to black.

## ON THE PULSE.

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[Concluded from p. 316]

### II. A comparison between the pulses of organic disease of the heart and those produced by ordinary causes.

I HAVE made experimental observations on this subject during the last three years, by taking written notes of the speed, quality, and circumstances of the pulse in about 8,000 cases, constituting nearly the whole of my out-patients at St. George's Hospital during the period alluded to.

Let us previously glance at the more simple qualities of the pulse, to obviate ambiguity as to terms.

*Magnus*—large, full.

*Parvus*—small.

*Validus*—strong (therefore “incompressible”).

*Debilis*—weak (therefore “compressible”).

*Durus*—hard (i.e. strong and abrupt).

*Mollis*—soft.

*Tardus*—prolonged (i.e. the distended state of the artery dwells long).

*Celer*—jerking, i.e. each beat is short and quick, as if the blood were “jerked” or shot under the finger; the artery in the intervals feeling unusually empty.

*Rarus*—infrequent or slow.

*Frequens*—frequent or quick.

*Intermittens*—intermittent, i.e. one, two, or even three beats are dropped, and the ensuing beat occurs at the regular interval. Sometimes the intermediate beats, instead of being wholly dropped, are slightly perceptible, rendering the pulse “unequal” as well as intermittent.

*Non-intermittens*—unintermittent.

Irregular, i.e. the beats recur at irregular intervals.

Regular, *vice versa*.

*Inæqualis*—unequal, i.e. where some beats are stronger than others. This pulse is generally irregular and intermittent also.

*Æqualis*—equal.

These simple qualities of the pulse may exist variously combined; and it is, indeed, principally in their combinations that we see them in nature.

I proceed to notice the states, whether simple or compound, which are of most common occurrence; and I shall first assign the ordinary causes of each variety, and then contrast each with the same pulse as produced by organic disease of the heart.

1. *The strong pulse* (therefore “incompressible”) proceeds from constitutional vigour or tone, imparting powerful contractility of the heart and arteries. It may also proceed from the heart being naturally strong-walled; for some hearts have thicker and others thinner walls than the average, yet both short of disease (Laennec).

*Cardiac causes*.—The same pulse may be produced, even in the feeble and atonic, by simple hypertrophy of the left ventricle (i.e. thickening of the walls without alteration of the cavity):

the strength of the pulse being referable to the increased muscular power of the ventricle. In great degrees of hypertrophy the pulse is also somewhat "prolonged," because a thickened ventricle contracts slowly.

2. *The strong and large pulse.*—The strength proceeds from the same circumstances as in No. 1. The largeness may be attributable to the large size of the individual, or to plethora distending the vessels, or to the naturally large calibre of the particular arteries examined.

*Cardiac cause.*—The same pulse, but often in a much higher degree and more "prolonged," is occasioned by hypertrophy, with dilatation of the left ventricle (*i. e.* thickening of the walls with enlargement of the cavity). The strength is owing to the increased muscular power; the largeness, to the increased capacity of the ventricle, whence an inordinate quantity of blood is forced into the arteries; the "prolongation" is owing at once to this preternatural repletion of the arteries, and to the longer time occupied by the heart, thus enlarged, in completing its contraction.

REMARKS.—The strength, largeness, and tense prolongation of the pulse of hypertrophy with dilatation, are sometimes so remarkable, that, in the absence of inflammatory and certain comatose affections, which alone can create a sound even approximating to this, the practitioner may generally make a successful guess at the disease from the single sign of the pulse. It must be understood that I do not attach the slightest value to a guess.

The pulses of hypertrophy, and hypertrophy with dilatation, present occasional exceptions; for depressed state of the nervous system, and debilitating causes in general, may neutralize the contractile energy of the heart: also, during great palpitation and dyspnoea, when the ventricle is gorged and incapable of adequately expelling its contents, the pulse may become small and weak. These exceptions, however, being generally referable to obvious causes, confirm rather than invalidate the general rule.

3. *The large and soft pulse,* and therefore "compressible." The largeness proceeds from the same causes as in No. 2; the softness from deficient constitutional tone, as in the aged, or

the enfeebled by disease or any other causes.

*Cardiac cause.*—The same pulse is occasioned by dilatation with hypertrophy of the left ventricle, *i. e.* enlargement of the cavity predominating over hypertrophy of the walls, so as to diminish their contractile power: hence the pulse is soft; while, from the preternatural quantity of blood expelled by the enlarged cavity, it is large. It is likewise somewhat prolonged. This pulse is liable to the same exceptions as the cardiac pulse No. 2.

4. *The hard pulse,* *i. e.* strong and abrupt.—It is generally, though not always, frequent. This is the characteristic pulse of inflammation and of ardent fever (the synocha of Cullen). It is more marked in inflammation of serous, cellular, and fibrous, than of other tissues. Even "active congestion" may occasion a moderate degree of the hard pulse. It may be absent in the atonic inflammation of feeble constitutions; or it may be replaced by a minor degree of hardness denominated "sharpness," viz. the pulse, though comparatively weak and small, is abrupt—a variety not easily distinguished, except by its cause, from the "jerking" pulse of anæmia. In fact, when an anæmic subject is attacked with inflammation, the "jerking" is converted into the "sharp" pulse.

*Cardiac causes of the hard pulse.*—If the strong pulse of simple hypertrophy, or the strong, large, and prolonged pulse of hypertrophy with dilatation, be moderately accelerated by any excitement, whether healthy or morbid, it acquires an abruptness in addition to its strength, which renders it preeminently hard: so that it is not exceeded, and often not rivalled, by the hardest pulse of serous or fibrous inflammation. It is frequently mistaken for an inflammatory pulse.

5. *The bounding pulse.*—This is a large and sudden swell or bound, without the strength and incompressibility of the hard pulse. It is always frequent. We see this variety in healthy persons when excited by violent exercise; in palpitation from nervous or mental excitement; in paroxysms of febrile excitement, as, for instance, during the influence of a stimulant diaphoretic; and it is common in acute rheumatism. It is often confounded

with the hard pulse, and injudiciously taken as an indication for bleeding—a dangerous mistake; for, as the bounding pulse is one of excitement, its subsidence is apt to be followed by exhaustion; and if this be unduly increased by unseasonable bleeding, it may issue in irrecoverable sinking.

*Cardiac cause.*—If the large soft pulse of simple dilatation be accelerated, it presents the bounding character in perfection.

6. *The "wiry" or "cord-like" pulse: i. e.* small, hard, and tense, like wire or cord, and always quick. This is considered to be the characteristic pulse of enteritis. The smallness is ascribed to the sedative impression produced on the nervous system by severe inflammation of the stomach and bowels. When, however, this sedative impression has attained a certain degree, the wiry hardness ceases, and leaves the pulse exceedingly small, weak, and quick; sometimes barely perceptible. Appropriate bleeding renders the wiry pulse larger, softer, and slower.

*Cardiac cause.*—Hypertrophy, with contraction of the left ventricle, occasions a small, strong, tense pulse, which becomes hard on acceleration. The smallness is owing to a deficient quantity of blood being impelled into the aorta; and the strong tension, to the increased force with which it is impelled by the thickened ventricle.

An exception presents itself when the capacity of the ventricle is diminished to a great degree; for, as the quantity of blood then expelled is insufficient to distend the arterial system, the pulse is weak as well as small. It is partly from having overlooked this exception, that some have denied the general fact that hypertrophy produces a strong pulse.

7. *The prolonged pulse\*, i. e.* the beat, being slowly performed, dwells long under the finger. The frequency of the beats is generally diminished, though, occasionally, it is increased;

\* I have employed the epithet "prolonged," because there is no English word at present in use which unequivocally represents the Latin word "tardus." The usual translation of it is, *slow*; but the word *slow* is commonly understood to imply *not frequent, i. e. rarus*, whereas the word *tardus* has no reference to frequency, but imparts *slowness of the individual beats*, which the term "prolonged" expresses without ambiguity. I offer this apology for presuming to introduce a new epithet.

but if the rapidity become great, the prolonged character ceases to be appreciable.

The prolonged pulse is seen in various states of cerebral stupor and coma, by which the contractile activity of the heart and arteries is diminished. The full slow pulse, common in apoplexy, and the oppressed pulse of cerebral concussion and cranial depression, and of inflammation of the brain during its transition into the comatose stage, present the most familiar instances of the prolonged pulse. I have also seen it during the apnoea of universal vesicular bronchitis, when the brain was oppressed by the circulation of insufficiently oxygenized blood.

*Cardiac cause.*—The prolonged pulse is occasioned by simple hypertrophy, and pre-eminently by hypertrophy with dilatation, being referable to the longer time occupied by the enlarged and thickened ventricle in the completion of its systole.

8. *The jerking pulse, i. e.* a remarkable brief, abrupt beat, with little or no strength, and with a feeling of emptiness of the artery in the intervals between the beats. This is the pulse of anæmia, when, from the blood being deficient in quantity, and too aqueous in quality, the arteries are not full and tense. We see it follow excessive losses of blood, whether sudden or chronic; also in chlorosis, and after chronic diarrhoea, leucorrhœa, starvation, protracted fever, or any exhausting diseases or circumstances which drain the system, impoverish the blood, and impart a pallid hue to the lips and complexion. The anæmic pulse is almost always quick, and the patient subject to palpitation on exertion. It is a pulse highly important to be understood, as it is very apt to be confounded with the bounding, the sharp, and even the hard pulse.

*Cardiac cause.*—The jerking pulse is occasioned by regurgitation through the aortic valves into the left ventricle, or through an aneurismal opening out of the aorta into either ventricle, or into the pulmonary artery—all which lesions prevent fulness and tension of the arterial system. The pulse, therefore, is still that of "unfilled arteries," and it illustrates the same state as resulting from anæmia, by a striking and beautiful mechanical analogy. When the regurgitation is very free,

the jerk may exceed that of the most decidedly hæmorrhagic or anæmic pulse, of which I recently witnessed a remarkable instance in a case of free regurgitation from the aorta, through an aneurism, into the right ventricle (John Mitchell, Westminster Hospital, under Dr. Roe): it is felt as if a hard ball were shot violently under the finger through an empty artery.

I have already stated that the jerking pulse of aortic regurgitation has been hitherto unnoticed by authors: so striking, however, is the phenomenon, that I have been in the habit of "guessing" from this sign alone, in the absence of anæmia, that, on placing a stethoscope over the aortic orifice, a murmur from regurgitation would be heard with the second sound: and rarely has this sign proved fallacious. Another consideration, however, contributes to the success of such a guess; namely, that the pulse of regurgitation may be as slow as natural, whereas that of anæmia is almost invariably and necessarily frequent, ranging from 90 to 130.

9. *The small and weak pulse.*—This is usually connected with delicacy of frame and constitution; and often with a thin-walled heart. It may also be occasioned temporarily by extreme plethora and obesity, under which circumstances it generally rises on bleeding.

*Cardiac cause.*—The small, weak pulse occurs in the later stages of dilatation with attenuation of the walls of the left ventricle\*: also in softening of the heart, and in hypertrophy with extreme contraction of the left ventricle†. I have occasionally seen it produced, though rarely in a considerable degree, by contraction of the aortic valves or orifice.

10. *The small, weak, and frequent pulse.*—This is from morbid debility howsoever occasioned; as, for instance, by the advanced stages of fever, of inflammation, of chronic diseases, &c.

*Cardiac cause.*—The small, weak, and frequent pulse occurs in the palpitations of dilatation, of softening, and of hypertrophy with great contraction.

11. *The fluttering or vermicular pulse:* i. e. so small, weak, and fre-

quent, as to be a mere flutter, or to feel like the movement of a worm. It proceeds from exhaustion and sinking; sometimes also, from nervous agitation, in which case it is only temporary.

*Cardiac causes* will be enumerated under the next head.

12. *The intermittent, irregular, unequal, small, and weak pulse.*—Several, or all of these qualities, may be occasioned by dyspepsia with nervousness, especially in gouty and bilious subjects: they may even result from nervous disturbance alone. I have repeatedly seen the whole exist simultaneously and in the highest degree, from these causes. The attacks are only occasional and temporary.

*Cardiac causes.*—The whole of the above qualities of the pulse almost always exist in a marked degree, and permanently, in great contraction of the mitral valve, and in free regurgitation through it; being attributable, I presume, to the irregular supply of blood to the left ventricle. I have also seen them once or twice in extreme contraction of the aortic valves, leaving an aperture not larger than a goose-quill. In moderate contraction, the regularity of the pulse is rarely affected, though its volume and strength may be somewhat diminished. I have also repeatedly seen all the above irregularities in a marked degree in chronic softening with dilatation. Moderate intermittence, irregularity, and inequality, are common in the last stage of mere dilatation, and I have occasionally seen them in the last stage of hypertrophy. In both cases they are probably referable to a failure of nervous power. Again, all the above qualities may exist in a high degree in pericarditis with copious effusion compressing the heart, in carditis, and in endo-carditis, with coagulation of blood choking its cavities (M. Bouillaud); also in cases of the sudden formation of polypus in any disease of the heart\*. In any of the instances cited, the pulse may become "*fluttering or vermicular*," during agitation or palpitation.

Intermittence from *ordinary* causes, never presents, according to my observation, the following varieties, which I have frequently met with in disease of the valves of the heart, and which are distinctly described by Galen and others

\* In the early stage it is sometimes large, though weak.

† This was not noticed by Bertin and Bouillaud, though they distinctly say that concentric hypertrophy, if great, constitutes an obstacle to the circulation. I find, however, that Bouillaud, in his subsequent work in 1835, properly describes the pulse as small and weak.—*Traité*, tom. ii. 533.

\* See Treatise on Diseases of the Heart, by the writer: Signs of Polypus.



of the old writers, though they were ignorant of the true cause.

1. In numerous cases, I have found every second beat of the pulse, and in several every second and third beat, *permanently* dropped; whence the frequency was only half, or one-third, of the natural standard. In the whole of these cases, with two exceptions, I found that though the deficient beats were not perceptible in the pulse, they were audible in the heart, being occasioned by ventricular contractions too feeble to propagate an undulation into the arteries: whence I have no doubt that such cases constitute the bulk of those recorded by writers, before the discovery of auscultation, as instances of remarkably slow pulses:—viz. 40 or 30 per minute. In the two cases of exception alluded to, each presenting a pulse of 28 (two intermediate beats being dropped) the deficient beats were not perceptible even by listening to the heart on the occasions when I examined the patients, though they previously had been in one of the two. Mere slowness of the pulse, however great, is not necessarily connected with organic disease of the heart. I am acquainted with one instance in which the pulse fell to 30 after hypercatharsis following a fever, and several months elapsed before it returned to its natural standard. I have at present a patient whose pulse has fallen from 60 to 42, from over-study producing cerebral exhaustion.

2. A more common variety of intermittence, almost peculiar, when permanent, to disease of the heart, is one attended with inequality: namely, one stronger beat of the pulse is followed by one, two, three, and in some cases even four smaller and barely perceptible beats, each attended with an audible contraction of the ventricles. These minor beats are sometimes unequal in size and force as compared with each other, and regular in their intervals.

13. *The pulse larger at one wrist than the other.*—This may proceed from an irregular distribution of the radial, or other arteries of the arm; from aneurism, or compression of an artery by a tumor, and I have often seen it occasioned by extending the arm forwards or across, when the patient wore a coat or corset too tight at the axilla.

*Cardiac cause.*—The same may be occasioned by contraction of the ori-

gin of one subclavian artery, resulting from disease of the aortic coats, usually connected with dilatation or aneurism of that vessel.

Such are the common varieties of the pulse resulting from ordinary causes, and such the corresponding varieties from disease of the heart. On comparing the two, the resemblance will appear striking; and, if so, it is obvious that the pulse cannot possess its legitimate value as a sign of ordinary disease—nay, that it will often possess a dangerously fallacious quality, unless due allowance be made for the modifying effect of accidental coexistent disease of the heart. I have repeatedly seen untoward consequences result from this complication being overlooked. The occasions demanding the allowance in question are not few; for, since auscultation has enabled us to detect even slight degrees of cardiac disease, once veiled in impenetrable darkness, or dimly seen through misty conjecture, these affections have been ascertained to constitute a class incomparably more numerous than was formerly imagined, and presenting endless complications with other diseases.

I am not without hope that the comparison which has been offered, may enable us, by removing some of the causes of ambiguity and fallacy, to assign to the pulse in general a certain number of well-defined and easily appreciable characters, each referable to tolerably distinct and uniform causes: and that we may be thus protected, on the one hand, from the old-fashioned labyrinth of transcendental distinctions, and, on the other, from the meagreness of a dependence, with Heberden, on frequency alone. Should such be the result, it cannot fail to contribute a mite to the amelioration of practical medicine: at least, I can frankly say, that since I have obtained an insight into the pulses of diseases of the heart, and, by the reflected light thus obtained, have acquired a clearer view of pulses from ordinary causes, I have consulted this sign with a facility, a confidence, and a success, to which I was previously a stranger. I am prepared, however, to expect that a considerable period must elapse before the cardiac pulses which I have described will be universally admitted.

March 27, 1838.



CONTRACTIONS OF THE LIMBS  
FROM SULPHATE OF IRON.

*To the Editor of the Medical Gazette.*

SIR,

IF you consider the accompanying case to be of sufficient interest, you will oblige me by affording it a place in your valuable journal.—I am, sir,

Your obedient servant,

O. A. MOORE.

York, May 18, 1842.

Joseph Green, æt. 14, a healthy looking boy, though not strong, residing in this city, has been employed in the laboratory of an extensive and respectable firm of wholesale druggists for about two years, where his father has been similarly engaged for several years past. Has enjoyed generally good health, though he occasionally complained of weakness in the limbs, &c. which were ascribed to his "growing." He was engaged during Saturday, May 7th, and the following Monday, and part of Tuesday, in picking the crystals from the strings in a wooden vessel where sulphate of iron was placed to crystallize—another boy being similarly engaged with him—occasionally putting his hands into the mother liquor, which he complained "cracked his fingers."

On the Tuesday, at 3 P.M., he was attacked with headache, and sickness, which continued for two hours (he having vomited two or three times), when he first noticed contractions in his arms, hands, and feet. He describes that his arms were bent at the elbows, and his fingers drawn towards the forearm by flexure of the wrist. His knees were slightly flexed; but his toes were drawn upwards rigidly towards the ankle. His mother proceeded to rub the limbs, which were very painful, especially the feet; the latter were put in warm water. About 8 P.M. he was much worse, the pain being, in the calves of the legs and feet, "distracting." He had also colicky pains in the abdomen.

The following morning a surgeon was called in, who ordered a powder (the bowels had not been relieved), which operated briskly by vomiting and purging; he directed that a dispensary recommendation should be obtained. This he accordingly did; and about 1 P.M. on Wednesday, I accom-

panied Mr. Wilson, the resident medical officer, to see him.

*Symptoms.*—We found him in bed, and unable to stand with ease, though his feet were not then contracted, but rather "stiff." His hands were completely flexed, as before described; yielding to forcible extension, but immediately returning to the same condition as before. Pulse not much accelerated. Rather feverish, with a thickly-furred tongue. Bowels relieved by the powder. Pain in the body and feet abated. Ordered—

Pil. Coloc. Co. gr. x. st. sd.; and the saline mixture with Magnes. Sulphas. Hands to be fomented with mustard fomentations.

12th.—Much improved. Hands quite natural, and were speedily relieved by the fomentations. No pain in the limbs; stools watery and offensive; weakness and pain in the back; slight febrile symptoms; tongue cleaner.

18th.—Up to this time has continued to improve, the aching pain in his back being the only symptom requiring notice. He has returned to his work.

*REMARKS.*—His mother informs me that the water he drinks is brought in buckets from the Ouse; and I find, on inquiry, that none of his fellow-workmen have ever been similarly affected. On application to one of the partners, I was most liberally provided with samples of the salt, and mother liquor from the trough, which I also examined; and the result of a careful analysis (assisted by my friend, Mr. Thisselton, of this city) is, that there is not the slightest appreciable quantity of any salt of lead in the solution. The salt itself is a beautiful example of the peculiar pea-green of the proto-sulphate of iron.

It will be noticed that, in the case of the foot, the extensors were not affected, but the flexors, in this instance; if we are to credit the mother's account, who states that she rubbed the "leaders which had started up in the foot."

The facts of the case were as above stated. I offer no conjecture as to the remote cause; though certainly the coincidence of their occurrence, with the continued application of solution of sulphate of iron to the hands, leads me to look to the latter as their cause.

The boy had not been employed for some time previously with any metallic salt.

## HÆMORRHAGE FROM EXTRACT- ING TEETH.

*To the Editor of the Medical Gazette.*

SIR,

A LATE fatal case of hæmorrhage succeeding the extraction of a tooth, although by no means an unprecedented occurrence, has excited much attention, and some alarm also, both in and out of the profession; and elicited many suggestions for the management of similar cases in future. Every body seems to have his own favourite plug, or wonder-working styptic; you will therefore, I trust, excuse me for mentioning my plug, which is nothing more nor less than the extracted tooth itself: reinsert it carefully, and keep it *in situ* the best way you can, and as long as may be necessary. I have myself had occasion to do this only once or twice in the course of a pretty long practice, when the bleeding had become alarming from its continuance, and effect upon the circulation; but, from the little experience I have had, I am disposed to think that the extracted tooth fits the bleeding cavity better than either cork or sponge, or any thing else that has yet been proposed.

Upwards of twenty years ago an interesting case of death from hæmorrhage following the extraction of a tooth was published in the *Medico-Chirurgical Transactions*, which I regret I have not an opportunity of referring to; but, so far as my memory serves, Mr. Blagden, surgeon to the late Duke of Kent, saw the patient the day after the operation, and failed to arrest the hæmorrhage. Some days afterwards Sir Benjamin Brodie used the actual cautery, with little advantage; and ultimately tied the common carotid, which also failed. The patient, a young man, died next day; being about a week after the extraction of the tooth.

This, like the recent fatal case, made a good deal of noise, and many nice things were proposed as *cures* for such untoward events; and I am not certain that the method which I now advise was not also recommended. But when the hæmorrhagic diathesis prevails, the individual is at all times in a perilous state, and only requires a slight wound

of any kind to be inflicted, to bring his life into immediate danger. To ascertain the diagnostic symptoms of this diathesis, and how best to improve the general health before having recourse to even one of the minor surgical operations, where this vitiated condition is suspected, appears to me far more deserving of our attention than how to stop a bleeding from the socket of a tooth, although it is doubtless the duty of the medical profession to be prepared for such accidents.—I am, sir,

Your obedient servant,

ARCH. BLACKLOCK,  
Late Surgeon, R.N.

Dumfries, May 14, 1842.

## CASE OF POISONING BY SUL- PHURIC ACID.

*To the Editor of the Medical Gazette.*

SIR,

IF the accompanying case of poisoning by sulphuric acid possess sufficient interest, I shall feel obliged by its insertion in the *MEDICAL GAZETTE*.

I am, sir,

Your obedient servant,

J. SCOFFERN, M.D.

Lecturer on Chemistry at the Aldersgate  
School of Medicine.

14, Alfred Place, Brompton,  
May 24, 1842.

On Friday morning, 20th inst., I was called in by Mr. Harness, a general practitioner, of Brompton, to visit Jane Speller, a servant girl, residing at No. 1, Pelham Crescent, Brompton, who was supposed to have taken poison. On my arrival, I found her lying on the floor of her bed-room, with a black frothy matter issuing from her mouth; her extremities exceedingly cold; pulse almost imperceptible; breathing laboured and irregular. Her cap, and some other articles of dress, were stained with black marks, similar to those produced by sulphuric acid. I immediately ran to the kitchen, procured a quantity of whitening, which I mixed with milk, and administered copiously. After this treatment she rallied considerably; a copious vomiting of streaky mucus supervened, and, by the aid of stimulating embrocations, warm bricks, &c. the extremities were brought to the natural temperature.

*Further treatment*, 2 o'clock. A.M.—Small quantities of mutton-broth and

arrow-root were given by a teaspoon, at frequent intervals; and the following injection was administered:—

*R. Jusculi Ov. ʒij.; Tinct. Opii, ℥x. M. ft. enema statim injiciend.*

Shortly after the administration of this enema, there was discharged about a pint and a half of black grumous matter, perfectly neutral as it regards the test of litmus paper.

The mutton-broth and arrow-root were returned almost immediately; but the yolk of an egg, administered in the entire state, was retained.

4 o'clock, P.M.—Rept. Enema.

*R. Tinct. Hyos. ʒij.; Cetacei, ʒij.; Vitell. Ov. Rec. tere bene in mortario; misce cum q. s.; Aq. Cinnamon.; Ad lagenam, ʒvj.; implend. de qua capiat ægra cochleare magnum partitis dos, omnia hor. 2.*

This enema, like the last, caused a copious discharge of black foetid matter, and afforded so much relief that it was determined to persevere in the treatment. The mixture, however, did not afford the relief anticipated, and, therefore, was not persisted in.

6 o'clock.—Breathing and swallowing more easy; but the stomach still in an intense state of irritation, rejecting every thing; violent desire for cold drinks; pulse nearly imperceptible.

V. S. ad uncias iv.

Blood, at first, flowed with difficulty; afterwards more readily. Under this treatment the pulse became more full.

8 o'clock.—The patient now slept, on the whole, soundly; breathing not very difficult; occasionally she was awakened by violent fits of coughing.

I remained with her all the night, and did not remark any manifest change of symptoms. About 5 o'clock on Saturday morning, she spoke to me, regretting the act she had committed, and hoping that her life might be saved. The same desire for cold mucilaginous drinks remained, and was freely gratified.

Saturday morning, 10 o'clock.—The administration of another enema was thought desirable, and was attended with a marked improvement in the general symptoms.

2 o'clock.—Great pain over the epigastric region, increased on pressure; general symptoms of severe gastritis; to relieve which, there were ordered—

*Hirud. xvij.*, followed up by an application of hot turpentine.

She now rallied considerably, and was rather disposed to become loquacious; her mental faculties entirely perfect.

6 o'clock.—Increased difficulty of breathing, to relieve which was ordered,

*Cataplasm sinap. faucibus externis applicend.*

This measure, however, was not followed by any amelioration of symptoms; on the contrary, the pulse still became more imperceptible; the breathing more difficult. She sank deeper in the bed, snatched at imaginary objects, and betrayed an alarming restlessness.

*R. Tinct. Opii, ℥xv.; cum pauxillo mucilaginis et vini xerici administrand.*

This produced a state of rest, from which she did not awake until half-past three. About this time I saw her: she described herself as free from all pain, and as having passed a comfortable night. At her request I gave her a little arrow-root from a tea-spoon, which she partook of with avidity, occasionally uttering epithets of satisfaction; then suddenly ceasing to swallow, as if desiring a little rest, she sunk back upon the pillow, and died without a struggle.

*Sectio cadaveris.*—Yesterday evening, in compliance with the coroner's warrant, I instituted a post-mortem examination, the appearances developed by which were as follow:—

Lips excoriated, and much blackened; œsophagus congested, and also blackened; cardiac and pyloric ends of the stomach intensely inflamed, blackened, and excoriated; middle portion of the stomach not so much affected; duodenum slightly affected; all other portions of the intestinal tube nearly filled with flatus; kidneys very much inflamed, *exerting an acid reaction on litmus paper*; left ovary contained a corpus luteum; right ovary a clot of blood; uterus, about the ordinary size, somewhat congested, and containing some purulent or mucous fluid adhering to its mucous membrane.

*Chemical analysis.*—As a matter of curiosity, I analyzed a minute portion of the cap, which bore evidences of the poison, and found the results to be most satisfactory. Distilled water, in

which the piece of linen alluded to had been digested, copiously precipitated chloride of barium and another piece of cap, on being treated in a test-tube, gave off an abundance of sulphurous acid gas, evidenced by the blue colour produced on transmitting it through a mixture of iodic acid and starch. This latter test I consider to be more available than any other for the purpose of discovering sulphuric acid in organic mixtures. Finding that the kidneys, when cut into, afforded a fluid which reddened litmus paper, I was anxious to see whether I could obtain from them evidences of sulphuric acid: this question I settled satisfactorily in the affirmative by means of Devergie's test, just alluded to: thus demonstrating its great value, and supplying an interesting fact to the physiologist.

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## MEDICAL GAZETTE.

*Friday, May 27, 1842.*

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."  
CICERO.

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### MEDICAL SCHOOL EXAMINATIONS.

THE improvements of late years made in the system of medical education have been great; and that the advantages arising therefrom are commensurate, is shewn by the higher professional attainments possessed, and the better character borne, by the general body of students at the present time, as compared with those of any previous period. But while we are far from insensible to these advances, and while we yield a willing assent to much good that has been already done, we cannot be so blind as to overlook the fact, that much more still remains to be accomplished in various ways. We would refer to one department only; and we think it evident that some glaring defect must exist in a system of examina-

tions which is attended with so large an amount of cramming as is now prevalent with the candidates for medical diplomas. We do not exaggerate—probably we understate the truth—when we affirm that at least five-sixths of the men presenting themselves for the examinations of the College and Hall, have undergone, for a greater or less period, the degrading process which has obtained the appropriate designation of *grinding*. So fashionable has this become, that it is regarded as an almost necessary routine; and the few who are daring enough to omit it are esteemed reckless and presumptuous persons, are thought to expose themselves to a needless risk, and, indeed, they are almost pitied for their foolhardiness by the more numerous class. Nay, we have even known teachers in schools acquiesce in the same opinion, and recommend their pupils "to grind," as the securest and most easy method of obtaining their diploma. We do not say that all the men thus preparing themselves are unacquainted with the principles of their profession, or have neglected the proper employment of their time during the period of their education. We are fully aware that many well-informed men are induced to have recourse to these means, from a sort of sympathetic influence, or from a terror of unfair and catch-questions requiring certain fixed answers which are to be found only in the note-book of the private tutor. The latter is a most influential cause, being sedulously and deeply impressed on the minds of students by the many whose interest it is to keep alive such an apprehension. It is, however, certain that great numbers, who have completely idled away the whole period of their education, and who are totally ignorant of medical science or practice, are, by these means, in a short space of time—six months, or less—worked up to the

required point, pass with credit, and are complimented on their extensive information.

To propose an effectual remedy for a system so deeply rooted, may be no easy matter. So long as it is possible to find an easier by-way to a degree, we cannot expect the careless followers of medicine to be voluntary toilers on the heavy and laborious road to science. It is, nevertheless, a duty, to check, as far as we can, these injurious customs, and to give inducements to the more honourable and useful study of the profession.

The examinations and distributions of prizes in the schools on the several subjects of medical education, which have been often before adverted to in these pages, have doubtless had much influence in encouraging the assiduity and awakening the zeal of the students generally, and especially of those who enter into competition; and it is on this account that their more extended influence is to be desired. If they have proved beneficial on a small scale, why should they not be more largely tried? At present, their advantages are very limited, inasmuch as they affect directly but a small proportional number. Even in the larger schools of this metropolis, it constantly happens that not more than five or six are found willing to contend in each subject, and not unfrequently one is allowed to walk uninterruptedly over the course. To obtain the full benefit which these competitions are capable of affording, it is necessary to render them compulsory—to require that each candidate for the diploma or license to practise should present certificates of having engaged, and satisfactorily acquitted himself, in a certain number of preliminary examinations. It is a system easily put in execution, and one which, we doubt not, would be attended with

a most favourable result. By it would be ensured, in a greater degree, the application of the student through a more extended course of time, and it would present the most effectual obstacle to the possibility of obtaining a degree by temporary cramming. The inefficiency of the curricula and registrations now in force to ensure the diligence of the student, is notorious. They really offer no check at all to inattention and irregularity. How far more effectually would the object they have in view be attained, by obliging the students annually to engage in the examinations held at the several schools. If all were obliged to compete, we believe there are very few who would not be induced to take some pains to maintain a respectable station.

We often hear it urged, as an objection to these examinations, that they tend to divert the attention of the aspirant from obtaining a sound and practical acquaintance with his profession; leading him to trust in book knowledge and theoretical information. This opinion is founded on the erroneous supposition, so very prevalent, that an acquaintance with the literature is incompatible with a study of the practical department of medicine—an opinion the more willingly assented to by many, as furnishing a ready excuse for the neglect of the former. We believe this idea to be one of the great hindrances to the advancement of medical science, encouraging as it does men to remain in ignorance of the principles of their profession, and leading them to act as mere mechanical agents, without inquiring into the causes of disease and the operation of remedies. As an argument in the present instance, therefore, we deem it untenable; indeed, it is opposed to the fact, that the students, who are best informed in the theory of medicine; are usually the most sedulous and suc-



cessful in obtaining information at the bedside of the patient.

It will perhaps be said that by the course proposed too much of the student's time would be employed in obtaining an acquaintance with those subjects (as botany), which have no direct connection with the practice of medicine. In answer to this objection we would simply reply, that, if to gain a competent knowledge of such branches be deemed a waste of time, why should they be retained in the curriculum of medical education at all? Why should the student be required to engage himself in the prosecution of a study the competent knowledge of which is not deemed important?

One of the evils of the present system of examinations for a diploma is, that the candidate is required to be at one time prepared with a great many subjects of a very comprehensive nature. Despairing of ever attaining to a moderate knowledge of all, he shrinks from the attempt as an Herculean task, and to avoid the disgrace of rejection has recourse to the alternative of working up a mass of definite answers to the questions most likely to be put. Feeling this to be the easiest, and at the same time fancying it the safest method, he is induced to rely entirely upon it, and idling nearly all the time appointed for his education, trusts to the last few months to fit him for his examination, and goes into the world possessing his license to practise, but in every other respect utterly unprepared.

Now if, at the conclusion of each session, all were obliged to evince a competent acquaintance with the subjects that had engaged their attention during that period, the necessity of requiring knowledge on so many branches at any given time would be diminished, and the constant attention of the student more certainly enforced.

By the repeated recurrence of examinations, men would at any rate be obliged more frequently to prepare their subjects, and at the same time that the probability of their retaining some information would thus be increased, a greater chance would be afforded to them of forming habits of application, and acquiring a relish for the study of their profession.

The advantage of rendering these school examinations, or something of the same sort, compulsory and universal, would be equally manifest as applying to the nature and intent of the examinations themselves. They would thereby be rendered much fairer tests of the relative merits and real deserts of the candidates than they at present are. For, though it be true, as a general rule, that the best informed men in the class are included among the number of those who contend for prizes, such is not always the case. We have, in repeated instances, known the most industrious and proficient unwilling, from a feeling of distrust their own powers, or some other cause, to enter the lists. On the other hand, when so few compete, the honour, though perhaps not the less deserved, is apparently diminished. Of four candidates, the least successful is apt to be looked upon as the *last* of that number, while the credit of being the fourth proficient in the class is overlooked. By a greater number of opponents the honour of success would be enhanced; while the demerit of failure would be diminished by the increased proportion of those who shared it. Again, the present system is liable to the objection, that some men, by devoting all their time and energies to one or two particular subjects, are enabled to gain the undeserved reputation of beating their more experienced compeers, whom duty or inclination induces to labour in

a wider field. On this account, a sort of monopoly of prizes is carried on in the schools, which, with other causes, interferes much with the effective operation of the examinations as they now stand, and even tends to bring an opprobrium on the system altogether. These hindrances to their beneficial action being entirely dependent on the partial manner in which they are carried out, would necessarily be obviated by the more universal application of them which we propose. They have already done much good, by exciting an honourable emulation among students, and promoting greater assiduity in the study of medicine; and we cannot see any good reason why this desirable influence should be confined to so small a number as it now is, and not extended to the general body. No inducements in the way of prizes, and nothing short of a compulsory plan, can effect the full advantage which these competitions are capable of producing: while the option is given to the student whether he will engage in them or not, it will be always found, as at present, that the devotees to idleness and gaiety will greatly outnumber the aspirants to honour and distinction.

The senate of the London University, acting partly upon this principle, require a certificate of the candidate's having passed preliminary examinations, before he is allowed to present himself for his degree; and thus far their project is good: but they also fall into the error of requiring a high degree of knowledge on so extensive a range of subjects as to intimidate men from the attempt, or induce them to have recourse to grinding as a means of preparation, which is carried on in the same manner, though to a less extent, as for the College and Hall.

## KING'S COLLEGE HOSPITAL.

## CASES OF APOPLEXY CONSEQUENT ON SYPHILIS:

## WITH CLINICAL REMARKS

By DR. BUDD,  
Professor of Medicine.

DURING the past year three patients have been brought into the hospital, under my care, with hemiplegia, the result of an apoplectic seizure occurring in the advanced stages of constitutional syphilis. These cases made a greater impression on me, in consequence of their resemblance to two cases which strongly arrested my attention several years ago. Two young men, with whom I was well acquainted, were struck with apoplexy about the same time. They were of naturally robust constitutions, but had both, for some time before the seizure, been affected with syphilitic rupia and periostitis. There could be no doubt that the apoplexy was caused by the syphilis, or by the mercury given to cure it. The former hypothesis seemed to me the more probable.

Of the three cases that you have seen in the hospital, the first in order is that of James Wetherall, æt. 27, who was admitted on the 21st of April, 1841. He told us that his health was very good until five years ago, when he had chancres, which were treated by mercury. After this he had ulcerated sore-throat, for which he was out-patient of St. Bartholomew's two or three months. About four years ago he entered the army, and six or seven months afterwards became affected with very severe headaches, and pains in the arms. On account of these ailments he was several times in the regimental hospital; and on one of those occasions, while in the hospital, he had a seizure, in which he fell down insensible. He soon regained his consciousness, and then found that he had lost the use of his left side, and that his face was drawn to the right. His speech also was greatly altered. The arm and leg were at first completely palsied, so that he could not move a finger or toe. At the end of some months the power of the arm had returned partially, and he was able to walk, but with lameness.

About twelve months ago had slight numbness in the right hand, and indistinctness of speech; symptoms which were removed by cupping. Has since had four or five slight attacks of the same kind.

About a month before his admission to the hospital, œdema of the legs supervened on his other complaints.

When brought under our notice, his face was puffy and bloated, and his legs were slightly œdematous. The urine was abun-

dant, and highly charged with albumen, which was deposited in solid shreds on the addition of nitric acid.

The left leg was permanently contracted at the knee, and he made great complaint of pain when any attempt was made to straighten it. It had been bent in this way, he said, for a month. The left arm was weak, but he could use it with tolerable freedom. The sensibility of the arm and leg were unimpaired. There was no perceptible paralysis of the face: the tongue was protruded straight, the pupils were equal, and the senses were perfect. His intellect was, however, somewhat impaired: his answers were slow, and his speech indistinct. He was free from headache or giddiness.

He had a large node on the shin of the left leg, and suffered pains in the limbs, which were worse at night. There was great tenderness on the humeri, and on the lower part of the left thigh-bone.

He complained of thirst, but his appetite was good, and his bowels regular.

His symptoms, then, were referrible, in part, to disease of the kidney, which seemed to be of recent occurrence; partly, to the old lesion of the brain; partly, to the periostitis, which still existed.

The dropsy and thirst were, no doubt, connected with the albuminous condition of the urine.

The weakness of the left arm, the indistinctness of speech, and the slowness of intellect, were the consequence of the apoplectic seizure.

The pains in the limbs, and the contraction of the left leg, of the periostitis still existing.

I was led, at first, to refer the contraction of the left leg to the cerebral lesion, but a closer examination convinced me that it depended on periosteal inflammation of the lower extremity of the femur. While physician to the Dreadnought, where syphilitic periostitis is very common, I met with several instances where contraction of the knee-joint, or elbow-joint, was the consequence of a node, or of periosteal inflammation under the flexor tendons.

On account of these latter symptoms I gave him gr. v. of iodide of potassium three times a day. The result was as I expected. In a few weeks the pains in the limbs had disappeared, and the leg was straight. He walked, however, with some lameness, on account of a slight degree of palsy of that leg, which persisted.

He left the hospital much improved in condition. The oedema of the face and legs had disappeared, but the urine continued albuminous.

The second case is that of Henry Harrison, set. 47, clerk in an office, who was

admitted into the hospital on the 14th of May, 1841, on account of periostitis.

He complained of pains in the limbs, worse at night, and there was great tenderness, with some pitting, along the tibia.

He ascribed his ailments to syphilis, which he contracted ten years before. He had not been intemperate in drink, and before he became infected had enjoyed good health. He took mercury, and the chancre healed, but about three months afterwards a scaly eruption came out on the scalp. It was about six months after the healing of the sore, as well as he can recollect, that he first suffered pains in the limbs, which were worse at night.

About seven years ago (three years after the chancre) he had sores (rupious) on the scalp, and very severe nocturnal pains in the head. After these symptoms had continued some time, he had a seizure, attended with loss of consciousness. On recovering his senses he found that his right arm was so weak that he could scarcely write, and that the right leg was also weak. He does not recollect his face being drawn.

The strength of the arm and leg gradually returned, and at present the only trace of the palsy is slight weakness of the right arm. Says that his memory has been impaired ever since the seizure.

The periosteal pains he now complains of came on three weeks ago.

He was ordered five grains of iodide of potassium three times a day, and soon left the hospital, cured of his periostitis.

The third case is that of William Dodd, set. 26, smith, who was admitted into the hospital the 2d of Dec., 1841, on account of headache and paralysis of the left arm and leg.

He stated that his health was uniformly good until two and a half years ago, when he contracted syphilis. The chancres healed at the end of two months under the use of pills, which made his mouth sore. About four or five months afterwards, he had sore throat and an eruption on the skin, which, after lasting some months, were cured by mercury. These ailments were succeeded by headache, and by pains in the limbs, which were worse at night; and about last Christmas, by sores on the legs.

The headache was very severe, and, like the periosteal pains, was worse at night.

These symptoms continued until five months ago, when he had a seizure, in which he lay almost unconscious for about an hour. On recovering his senses he found that he had lost the use of the left arm and leg. The tongue and the left side of the face were also partially paralysed. At first there was numbness in the paralysed parts, but sensation was soon restored. After the seizure the headache was less severe than

before, but he has suffered from it, at intervals, ever since. The sores on the legs healed, and the pains in the bones were removed by medicine (iodide of potassium?) of which he does not know the nature.

At the time of his admission, he was free from pain in the limbs, his complexion was clear and florid, and he had no eruption, except between the eyebrows, where there was a copper-coloured spot, about the size of a sixpence, covered with very small and thin, greyish, scales. He had very little voluntary power in the left arm, and walked awkwardly and with difficulty, on account of the paralytic affection of the left leg. The pupil of the right eye was larger than that of the left; but there was no paralysis of the face or tongue.

The left arm was contracted at the elbow and wrist, and the fingers drawn in towards the palm. It required considerable force to extend the fingers or the arm, but an attempt to do so caused no pain.

The left leg, while he lay in bed, was rigidly extended; and the foot a little turned inwards by contraction of the *tibialis anticus*.

He had no twitchings in the palsied limbs, but told us that when anything occurred to startle him the left hand became more firmly clenched. When he was uncovered, the left arm and leg shivered violently, but the right were perfectly still. (This circumstance was witnessed several times during his stay in the hospital).

The sensibility of the palsied limbs was unimpaired; and their muscles were very little, if at all, wasted.

He complained of headache, chiefly on the right side.

He was purged for a day or two; and then ordered five grains of iodide of potassium three times a day. The iodide produced more than its usual constitutional disturbance, and we were obliged to discontinue it. It was again resumed; and on the 22d, while he was still taking it, he had an epileptic fit, which was followed by severe headache and by feverishness. On account of this, the iodide was again left off, and he was ordered to be bled from the arm and to take brisk purgatives.

On the 4th of January he had another epileptic fit, which lasted nearly an hour. During the fit, the left limbs shook violently, but the right were quiet; he was perfectly unconscious, and foamed at the mouth.

After this he was ordered five grains of blue pill, night and morning. Under this treatment the spot between the eyebrows disappeared, and the headache became less severe.

He left the hospital on the 2d of February, with the palsy just as it was at the time of admission.

In this case the patient was too young to

allow us to suppose that the apoplexy was caused, as it often is in advanced life, by degeneration of the arteries of the brain; and he assured us he had never drunk hard, and that he had received no blow on the head. As in the former cases, we cannot held ascribing the seizure either to the syphilis, or to the mercury given to cure it. The latter hypothesis is here very improbable. He had indeed taken mercury twice—first, for the chancre; secondly, for the sore-throat and eruption—but the mercury was not, either time, carried to salivation, and he had taken none for twelve months before the seizure. If the seizure were the effect of the mercury, it would in all probability have happened sooner after its administration. We are driven, then, to consider the apoplexy the effect of the syphilitic virus. This conclusion is strengthened by the consideration that, in all the cases, the apoplexy occurred in the advanced stage of syphilis; when the patient had been for some time affected with periostitis, and in every case but one, where no mention is made of rupia, with rupious sores.

It may be a question whether the apoplexy resulted from the immediate action of the syphilitic virus on the brain, or whether it was consequent on syphilitic inflammation of the bones of the head. Dissection, in a case of this kind, would settle the point. If the disease of the brain be the effect of that of the bones, it is most probably seated at the surface of the brain, and in contact with the diseased bone. In Wetherall and Harrison, the intellect was more affected than is usual with the same degree of paralysis—a circumstance tending perhaps to show that the lesion was towards the surface of the brain.

The cases I have related are, I think, sufficient to justify us in considering apoplexy as one of the effects of the advanced stage of syphilitic disease, characterized by periostitis and rupia.

In the case of Dodd, you have remarked many interesting phenomena, resulting, as Dr. Marshall Hall has shewn, from the high degree of irritability of the muscles of the paralysed limbs. The left leg was rigidly extended, and the foot turned inwards; the left arm was contracted at the elbow, and the fingers were drawn towards the palm, by permanent contraction of the muscles. When he was uncovered, the left arm and leg were violently shivered from the impression of cold air; while their fellow limbs were perfectly still. The impression was here the same on the two sides; but there was shivering of that side only whose muscular irritability was exalted.

The influence of emotion was also seen in

the palsied hand. Dodd told us that, whenever anything occurred to startle him, the hand, over which he had not the slightest voluntary power, became more firmly clenched. The influence here, like the impression of cold, must have acted on the two sides alike; but its effects were seen only in the hand whose muscular irritability was exalted, and which was no longer controlled by the will.

Another proof of the high irritability of the muscles of the paralysed limbs, more interesting because less frequently seen, was their being convulsed during an epileptic fit, while the opposite limbs were motionless. There is reason to believe, from the complete loss of consciousness, that during an epileptic fit both sides of the brain are affected alike. The left limbs only were convulsed in Dodd, because their muscles were more irritable than those of the right. They gave evidence of an influence too feeble to affect the opposite limbs. M. Cruveilhier has published the details of a case in which the same fact was observed. The patient, who had been many years palsied on one side, was subject to epileptic fits. During the fits the palsied limbs only were convulsed. It would seem from this that the degree of convulsion in epilepsy depends in part on the degree of irritability of the muscles; and we should expect that, as a general rule, the frame would be more convulsed in epileptic fits that occur in the morning on waking, than in those which occur in the evening, when the irritability of the muscles has been somewhat exhausted by the fatigues of the day.

## VACCINATION ACT.

*To the Editor of the Medical Gazette.*

SIR,

I SEND you the following remarks on the working of the Vaccination Act, for publication in your valuable GAZETTE, or otherwise, as you may think proper.—I am, sir,

Your obedient servant,

J. N. STEVENS,

Cornwall, May 16, 1842.

Surgeon, &c.

*On the Insufficiency of the Vaccination Act to effect the purposes for which it has become the law of the land—viz. the making the performance of Vaccination general, and thereby ultimately banishing Small-Pox from our shores.*

I believe it was generally hoped that the Vaccination Act, when once in full operation, would be the means eventually of eradicating small-pox altogether from the country; and if the good intentions of the legislature could have been carried into full

effect by the provisions of this enactment, such might ultimately have been the happy result; but I would ask, has this been the experience of the public vaccinators? As an individual who has had some little experience in the matter, I am compelled to reply in the negative; and I verily believe that my statements on this subject will be confirmed by most others who have held similar appointments—at least in rural districts. In the first place, then, I find the parties who generally avail themselves of gratuitous vaccination, although considering it of decided efficacy as a preventive of small-pox (of uncertain duration), and as greatly modifying any subsequent attack of variola, and although the *bump of philoprogenitiveness* may be largely developed on their individual skulls, I am sorry to add my experience has led me to the conviction that the anxiety they should feel for the good of their little ones is very frequently only awakened when the hideous monster (small-pox) actually makes its appearance amongst them in its most malignant form—the precursor of death and deformity to their nearest and dearest connections. At Michaelmas 1840 I obtained a vaccination appointment to an extensive district of the Helston Union, which was divided into four convenient stations for the public performance of the operation: small-pox had just then made its appearance amongst us as an epidemic, and between this time and Lady-day the applications for vaccination were so numerous that I had performed the operation successfully on nearly 400 persons; but from this date to Michaelmas, when my contract terminated, scarcely any applications were made, although, out of a population of about 7000, there must have been during the nine months a very considerable number of children who should have been operated on. But the small-pox had disappeared; and with it the anxiety of the lower orders in reference to the protection of vaccination, and, in the interim of another varioloid epidemic, they will exhibit an apathetic carelessness on this all-important subject deeply to be regretted. And this leads me, in the second place, to contend, that the intention of the legislature and the hopes of the country in regard to the ultimate object of the Vaccination Act will be alike defeated, unless there be inserted in the act a clause compelling the vaccination of all children before the age of four months, if in good health, and in default thereof the parties to be subjected to a penalty. This might be considered by some persons too arbitrary and despotic a clause, but I am quite convinced; without something of the kind is done, the grand anticipated result of gratuitous vaccination will never be obtained; and, when it is considered that this act of parliament was framed for a great individual



and still greater public good, it could not I think with reason be objected to. The effect of so many thousands of children being permitted, by the indifference of their parents, during the absence of small-pox, to remain for years without the protection afforded, and freely offered them by this act, (which assuredly without a compulsory clause will be the case,) would undoubtedly be to perpetuate small-pox to the latest generations.

### POOR-LAW QUALIFICATION ORDER.

*To the Editor of the Medical Gazette.*

SIR,

IN a letter which you did me the favour to insert in your number for the 22d ult., I dwelt upon the cruel injustice of the Poor-Law Qualification Order, in its bearing upon those members of Scotch and Irish Colleges of Surgeons who are also Licentiates of the London Society of Apothecaries. This injustice seems likely to take effect somewhat sooner than was anticipated. Before the order came into operation, the usual spring election of medical officers had, in most of the Unions, been made; and those who protested individually (as I did) against the order were reminded that, before it could personally affect them, the Medical Reform Bill of Sir James Graham, or, for a certainty, the renewed Poor-Law Bill, must pass, and would probably not be carried without a satisfactory adjustment of the rights and privileges of the various British Graduates and Licentiates. In compliance, however, with the new regulations of the Commissioners, many fresh medical districts are being formed, requiring a fresh supply of medical attendants. From these new appointments all British surgeons and apothecaries, whose diplomas in surgery are from any other College than that in London, are virtually excluded; and as it seems intended to make the situation of medical officer to a Union as permanent as may consist with the due performance of its duties, such practitioners as are shut out now will probably remain so for many years to come. If Mr. Guthrie is sincere in his liberal wish as to equality of privilege between the medical men of the three divisions of the kingdom, and if Mr. G. C. Lewis is still sensible of the propriety of that wish (see Mr. Guthrie's letter to Mr. Hovell, p. 23 of this volume), now is the time to act on their professions, and to settle the matter "in a manner which will be satisfactory" to all parties.

But the legal adviser of the Commissioners has some objections (legal, of course,) to an equality of medical privilege in respect to

the Poor-Law. How prone some men are to strain at a gnat, and then quietly swallow a camel! In the same breath with which this legal oracle denounces the "duly licensed" and "virtually doubly qualified" Licentiate of the College of Surgeons of Edinburgh or Dublin, and of the Apothecaries' Company, London, as ineligible for medical office in any Union where a practitioner, having the "double English qualification," can be procured, he admits the holder of an English degree in medicine to be qualified as an apothecary! The business of an apothecary is to advise, and supply for gain, medicines in medical cases; and whether this be done in private practice, or in attendance upon paupers, it is undoubtedly illegal unless the practitioner be qualified under the Apothecaries' Acts of 1815 or 1825.—I am, sir,

Your obedient servant,  
EDINBURGO-LONDINENSIS.

May 23, 1842.

### STATEMENT OF THE VISITING COMMITTEE OF THE COUNTY LUNATIC ASYLUM, NEAR GLOUCESTER.—1841.

IN presenting the REPORT of the ASYLUM for the past year, which forms the Eighteenth Annual Statement, the Visitors consider that they may confidently invite the public attention to the establishment under their government; and they refer to the table of admissions and discharges, as exhibiting in a most favourable view the result of the treatment adopted.

The generous regime and the nutritious diet which have always formed part of the treatment of the patients here are still persevered in; and it is with no small degree of pleasure that the Visitors find other similar institutions adopting the same means, and confirming, by the improvement in the curative results, and by the diminution of the mortality, their beneficial tendency.

During the past year, the Visitors have made a great addition to the comforts of the patients—and they trust a grand step towards a public benefit—by commencing a system of receiving into the asylum a limited number of officers of both sexes, in the double capacity of *assistants and students*, who do not entail any expense upon the establishment, whilst they devote the whole of their time and energies to its business. Those of the male to be medical gentlemen who have completed their professional education; and those of the female, young ladies

of good education and manners, and both required to remain twelve months in the asylum. They reside constantly with the patients—head their tables—join in their excursions—promote their amusements—arrange their difficulties—and act in all things as their friends and advisers. By their means the objectionable, but previously unavoidable, services of *keepers of both sexes*, belonging in fact to the class of menial attendants, will be done away with, and they will be reduced to their proper position as *servants* in attendance upon persons afflicted with ill health. This system has been commenced, and as far as such officers have been appointed, has proved very satisfactory. The Visitors have likewise during this year sanctioned—in fact, but not as a universal regulation—the total disuse of all mechanical restrictions on the persons of the insane: they have also allowed the introduction of *female attendants* to a share in the management of, and providing for, the male patients. It has ever been the practice of the medical officers to use as little restraint as was deemed compatible with the safety of the patient, or the protection of those about him; but they admit with the Visitors, that up to this time, all the patients are as securely managed, and are governed with much less difficulty and disturbance without than with mechanical assistance.

From the causes above named, and perhaps from others not at once cognizable, the asylum has, during the past year, exhibited a vast increase of good order and comfort. The exercising grounds, formerly scenes of occasional riot and confusion, with indications of mischief and destruction scattered on all sides, are now laid out as vegetable and flower gardens, and planted with fruit trees. To these, all the patients of each class and sex respectively, have constant access, and yet the productions of each are permitted to flourish, and their fruits to attain maturity. With the simple arrangement on the part of the Superintendent, that whatever the patients will cultivate and protect shall be their own, and be shared amongst them, and that those who irregularly or furtively misappropriate any portion shall be deprived of their share at the time of distribution, nearly the whole produce of each garden was this year brought to maturity, and partaken at the tables of the patients who had raised them.

Balls and other amusements, occurring in lunatic asylums, have been of late publicly mentioned as matter of admiration and astonishment. In this asylum, large parties for dancing have always been promoted; as well as dinner and evening parties, when proper, and pleasurable excursions, for many hours, in the country. Musical entertainments within the walls, and attendance on

public amusements, are of so frequent occurrence, that they constitute the practice rather than form the occasional source of astonishment in this asylum. Indeed, to so great an extent does our Superintendent endeavour to make his patients feel that they belong to the great community of mankind, and are only temporarily separated for their health's sake, that he encourages a great proportion to attend to their religious duties, on Sundays, in the places of worship in the city and neighbourhood; and induces all who can or will separate themselves from the asylum, to take their exercise in the surrounding country; whilst, to give encouragement to those who are inclined to be industrious, he employs all he can *without* the walls, in various ways, and cultivates nearly twenty acres with the spade in the fields adjoining and belonging to the asylum, with scarcely any other check upon their escape beyond the good feeling subsisting between himself and them.

The Visitors, being powerfully impressed with the conviction that the sole objects of this establishment are the cure of the patients, and the kind treatment of those who are incurable; and with the palpable fact ever before them, that the interests of the officers consist alone in these, whereby their responsibilities are diminished, their benevolent feelings and professional pride are gratified, cannot refrain from urging upon those whose relatives are afflicted with insanity to seek rather the public than the private asylum. They urge still more the taking this step in the early stage, when the disease has not been tampered with by inexperience, nor rendered hopeless by delay; for it is amongst the few regrets which the retrospect of past years affords, that the most painful cases have ever been those in which one or other of these misfortunes has befallen; while it is an acknowledged fact, that of those who are sent within two or three weeks of the commencement of the malady, nine-tenths are cured.

The Visitors, directing attention to the number of deaths which have occurred during the year, would express themselves strongly on the many instances in which patients have been sent from distant parts of the county, almost in a dying state—either from old age, paralysis, or consumption—in which it is not uncommon that the last stage of the disease is attended with excitement, and in which the sufferer becomes noisy. Such are not proper objects for a lunatic asylum; they do not strictly constitute insanity, but are cases of delirium attendant on exhaustion, which cannot be otherwise than exasperated by the exposure to a long journey, and the distress of being thrown amongst strangers, and which, moreover, cannot be relieved after their arrival.

Annual Report of the State of the Gloucestershire Lunatic Asylum for 1841.

Patients on the books, December 31, 1840 :—										223
Males		.		.		.		98		} . . 223 .
Females		.		.		.		125		
1st class, M. and F.		.		.		.		10		} . . 223
2d class, M. and F.		.		.		.		43		
3d class, M. and F.		.		.		.		170		
Admitted during the year										124
Males		.		.		.		51		} . . 124
Females		.		.		.		73		
1st class, M. 10—F. 9		.		.		.		19		} . . 124
2d class, M. 9—F. 20		.		.		.		29		
3d class, M. 32—F. 44		.		.		.		76		
Discharged :—										347
Males		.		.		.		44		} . . 114 . 114
Females		.		.		.		70		
Cured	1st class.		2d class.		3d class.		Total.		233	
	M.	F.	M.	F.	M.	F.			M. F.	
	3	7	5	15	18	30	78	26	52	
Relieved	0	0	0	1	0	0	1	0	1	
Removed	1	3	2	2	2	2	12	5	7	
Died	1	0	1	2	11	8	23	13	10	
		5 10		8 20		31 40		114		
		—15		—28		—71		44 70		

MORAL TREATMENT OF THE INSANE.

IN what does the moral treatment of insanity consist? It may be said to consist in encouraging habits of self-control, in gently exercising the faculties of the mind, especially those not involved in the disease, in affording scope for the pursuit of useful employments, in gratifying innocent tastes, and bringing to bear on excited feelings and eccentricities the influence and example of sound minds. For prosecuting such treatment something more is required in an asylum than provisions for the safe-keeping of its inmates. The scholar should have his library, the artist his studio, the agriculturist his farm, the artisan his implements, and every one, society, and the means of recreation and amusement. Opportunities should be afforded for the inmates leading, so to speak, a rational life. An epitome of the world without should be presented to them, wanting, as much as possible, the sources of agitation and excitement in operation there.

I have endeavoured to keep these objects steadily in view. The inmates have been encouraged to engage in such pursuits as were congenial to their tastes; and already that system of in-door occupation has been begun, which, I trust, will form a conspicuous feature in the extended establishment. In excursions to the country, visits to public places, and to relatives at home, efforts of self-control have been beneficially called forth. Meetings of the inmates, for various

purposes, have been held, where the influence of example, and the restraining effect of society, have been exemplified. I allude to the daily attendance in chapel,—to concerts,—to meetings of a convivial nature,—and to others in the winter evenings, when, with the aid of a magic lantern, some information on interesting subjects, and no little amusement, was afforded. Daily religious services might, at first, appear open to the objection, that as religion is the cause of insanity in some, and is the subject of delusions in others, it ought not to be made a frequent subject of attention in an asylum. But experience leads us to draw a distinction between the effects of it presented to the inmates as a body, and as individuals. It may be advantageous, and certainly not hurtful, to place them in conditions where a certain restraint must be imposed on their demeanour, and religion is exhibited simply as the page of truth exhibits it, while it might prove positively injurious to attempt by arguments or reasonings, however cogent, addressed to individuals, to combat their gloomy or perverted views. Attendance in the chapel forms an epoch in the day,—it tends to give a new current to thoughts usually morbid; and it is not to be forgotten, that there are, among the inmates of an asylum, those who entertain the justest views of religion, and are, therefore, entitled to the enjoyment of all its privileges.

Every day is adding to the triumphs of moral over physical restraint, in the treatment of the insane. Whether we are yet prepared to dispense with the latter—in the

sense of personal restraint—in all cases, I do not presume to determine. To diminish its amount is, however, now the object of all engaged in the treatment of the insane; and, as in other cases, it is by the accumulation of facts, and the details of varied experience, that correct views are to be acquired on what still remains disputed regarding it. For eighteen months I have not considered it necessary to use personal restraint on any occasion during the day. In one case, (a suicidal patient,) I have been reluctantly compelled to make use of it during the night; but with a larger staff of attendants, or a building constructed on the plan of the new establishment, I would have been enabled to dispense with it even in that instance.—*Dr. M'Kinnon, in Report of Edinburgh Lunatic Asylum.*

### MORAL MANAGEMENT OF THE INSANE.

THE general or moral management of our inmates has not differed since our last report. Music parties were introduced during the winter evenings, and evident benefit, as well as cheerful amusement, resulted from their adoption. The systematic employment of the patients has also proceeded with unabated or rather increased vigour. The proofs of this statement are to be found in the appended work-accounts, the state of the grounds, and the appearance of the crops. Indeed so propitiously has this system operated, that it appears not only to have superseded the use of restraints in many of those cases in which it was once conceived to be requisite, but has also modified the necessity for that rigid supervision which had been supposed to be the only alternative of coercion. In no one instance has the latter been resorted to during the last year; nor has the occurrence of any unfortunate casualty alloyed the gratification we enjoy, when contemplating this overthrow of "the iron rule of ancient usage."—*Report of Northampton Lunatic Asylum, 1841.*

### LIME MOXA.

DR. OSBORNE has availed himself of the high temperature produced by lime in the act of slaking, for the purpose of a moxa. Some quick lime in powder, to the depth of about half an inch, is placed upon the skin inside a *porte moxa*, or a strip of card bent together, and tied so as to form a circle. Some water is dropped on and mixed with it. In about two minutes the mixture swells and becomes dry, and at the same time a high degree of heat is produced, which, according to some experiments, may amount to 500°

Far. This moxa Dr. Osborne considers to be superior to all others; first, from the intensity of the heat, which, by using a larger bulk of lime, may equal the potential cautery; and secondly, from its convenience, not requiring the assistance of any heated substance, and being unaccompanied by the emission of sparks or smoke, which create terror in the mind of the patient. When the quantity of lime applied is smaller than above mentioned, or not kept on long, the result is an appearance resembling that produced by acetic acid, and a thick crust is formed, which separates according as the new skin is perfected underneath. When, however, the quantity is as large or larger, and kept on as long as the heat continues, then a complete destruction of the skin ensues; and thus issues may be made of greater depth, and in a much shorter time, than by the usual escharotics.

In order to ascertain the depth to which this moxa acts, he applies it on the surface of an egg, and then observes the thickness of coagulated albumen formed underneath. This shows the extent to which the serum may be coagulated in the vessels of the part, and which is subsequently separated by ulceration as a foreign body; but the beneficial action of a moxa does not stop here: its superiority as an escharotic or counter-irritant, according to Dr. Osborne's view, consists in this, that the heat produces a contraction and change in the action of the vessels of parts over which it is applied, with great excitement of the absorbents, enabling them to return to a state of health after the failure of all other means, as may be seen from the cases related in Larrey's work on this subject, and as is well known and acted on by veterinary practitioners. In one case, at Mercer's Hospital, it was productive of a very decided change. A female laboured under the symptoms of ulceration of the upper part of the rectum and sigmoid flexure, for above a year, and had constantly most severe pain in those parts on passing her motions, which were accompanied by discharges of purulent and sanious matter. On being examined, the rectum and lower part of the colon were free from contractions, and the fecal masses which occasionally passed, although productive of great suffering, yet showed that the passage was not considerably narrowed; a lime moxa, which extended to about the size of a crown, was applied over the sigmoid flexure, and was immediately followed by a diminution of pain and an almost complete cessation of the discharge; and before the ulcer produced by the moxa had filled up by granulations, all the symptoms of the internal ulceration had entirely disappeared. In a case of commencing softening of tubercles, and in another apparently of purulent infiltration

after pneumonia, its effect in putting a stop to the ulcerative process was most decided.

In a case of hip-joint disease, in which there was great pain, and consequently loss of sleep, the patient slept well on the following night, and in a few days gained much power over the limb. And in another case of the same disease, which had proceeded to destruction of the joint, and extensive enlargement of the parts around it, a copious discharge of the moxa was followed in a fortnight by a complete subsidence of the enlargement, and a corner of the ulcerated surface is now kept open as an issue, the remainder being allowed to heal under a water dressing. It is to be observed, that the size of the ulcer formed is always much larger than that of the lime applied, in every case having at least twice its diameter.

When the lime is prepared from calcareous spar, the heat produced on the addition of the water is sudden and intense, and the pain is proportionately urgent. For ordinary purposes, however, well selected pieces of lime, from a lime-kiln, answers well if *fresh*, but not otherwise.—*Dublin Journal of Medical Science*.

### MULTILOCULAR ANEURISM OF THE THORACIC AORTA.

DR. LAW said the specimen before him was one of aneurism of the aorta. The patient, a man about forty-three years old, was admitted into Sir Patrick Dun's Hospital about five months since. He complained of violent pain in the left hypochondrium and epigastrium; at the time of admission this was so intense as to oblige him to rest with his knees up to his chin. The history of the case was very imperfect and unsatisfactory, as the man gave a very vague account of his symptoms, and the only thing that could be learned from him was, that he had been for the last two years subject to two kinds of pain, one of which was constant. He also had pains along the course of the ribs, and described a central point in his chest from which the pains radiated on every side. On the third day of admission he began to complain of dysphagia. On examining the chest, Dr. Law found the respiration more feeble on the left than on the right side; he complained of nipping pains in various parts of the left side, and when Dr. Law attempted to introduce a probang, he found its passage arrested about four inches below the opening of the fauces. The nipping pains, the dysphagia, and the dulness on percussion in the left side, with the fulness of the veins of the neck, led Dr. Law to suspect that it was a case of thoracic aneurism; but this was by no means certain: there

was no bruit de soufflet heard over the region of the heart, or where the aneurism was supposed to be seated, and the diagnosis remained undecided until the appearance of a pulsating tumor on the left side of the back, between the spine and the posterior margin of the scapula, set the question at rest. The appearance of this tumor was attended with increase of the pains along the course of the ribs, and on making an examination, a strong pulsation, accompanied by a distinct bruit de soufflet, was evident, the latter to be heard at various points of the chest, and masking the respiratory murmur. His breathing was tolerably free, except that it was a little more feeble on the left side, and inspiration was longer than natural, as if something was pressing on the trachea. He could not swallow when in the recumbent posture, and always took his food and drink sitting up in bed with his body bent forwards and to one side. Sometimes the difficulty of swallowing was referred to the top of the sternum, sometimes to the epigastrium, and he complained at one time of pains in the chest, at another of pains in the epigastrium and hypochondria; in fact, his symptoms were so numerous and so variable that Dr. Law was convinced that the presence of a single aneurism would not be sufficient to account for them. At the end of about four months he was beginning to feel considerably exhausted; the tumor on the back was now greatly increased in size; it had destroyed the ribs, protruded on the back, and was covered merely by the skin and muscles. When examined, it communicated to the finger a sensation as if its contents were fluid. About the end of the fifth month the man died, partly from exhaustion and partly from excessive secretion into the bronchial tubes. On dissection, a very interesting specimen of multilocular aneurism was discovered; it was of great size, and extending equally on both sides of the spine. Dr. Law said that he had omitted to mention that the pulse at each wrist was nearly equal. In front of the tumor lay the lungs, and this accounted for the absence of bruit de soufflet in the early stage of the disease, the lung overlapping it in such a way that the respiratory murmur completely masked every other sound. The aneurismal tumor seemed to consist of three portions, one to the left, which was filled with fluid blood, another lower down, in front of the spine, containing a dense firm coagulum. Dr. Law thought it probable that the disease commenced originally in the right side, and extended afterwards to the left, and that it was this latter portion which had been diagnosed during life. The sac had exercised a slight degree of pressure on the trachea, and on the lung, particularly at the left side. There was no symptom of paralysis. The first symptom was derangement of the sto-



mach and digestive system, and this was followed by the radiating pains and difficulty of deglutition. It was these pains, and the recollection of other similar cases attended by analogous symptoms, which led Dr. Law to suspect the existence of ammonia; the small tumour presented itself posteriorly between the scapula and the spine, it was impossible to determine its nature with accuracy. Dr. Law said that as the preparation had been only a few hours in his possession, he had not been able to examine it as minutely as he wished, and hoped to be able to bring it more fully before the Society at the next meeting. — *Dublin Journal of Medical Science.*

### NEW PREPARATIONS OF IRON.

*Citrate of iron.*—The citrate of iron appears to have been first introduced to the notice of the medical profession by M. Béral, of Paris. The process given by this pharmacien for the preparation of the salt, and which was published in 1831, is as follows:—

Take of crystallized citric acid four ounces. Distilled water four ounces. Moist hydrated peroxide of iron about eight ounces. Weigh the acid and water in a platinum capsule, and apply heat; when the acid is dissolved, and the solution boiling, saturate it with the oxide of iron, adding rather more of the oxide than the acid will dissolve. When cold, filter the solution, and make the quantity sixteen ounces. This solution, spread out on glass, will speedily dry, and separate itself from the glass in thin lamellæ.

The hydrated peroxide of iron may be prepared either from the sulphate or from the sesquioxide of iron. A formula for its preparation from the sulphate is given in the Edinburgh Pharmacopœia. It is prepared from the sesquioxide, by dissolving this oxide in hydrochloric acid, and precipitating with ammonia.

The oxide of iron and citric acid combine in the proportions of forty parts of the oxide to seventy of the crystallized acid. In using the moist hydrated oxide, as the degree of moisture will be subject to variation, the oxide should be added in excess.

The salt thus formed is uncrystallizable; it strongly reddens litmus paper, and has an acid, not unpleasant, taste. It is very slowly soluble in cold water; so much so, indeed, as to have led to the supposition of its being insoluble. It dissolves readily in boiling water.

*Ammonio-citrate of iron.*—If to the acid citrate of iron in solution, prepared according to the foregoing process, ammonia be added, so as to neutralize the excess of acid, a double salt is obtained, which dissolves in cold water much more readily than the citrate,

and which, from its neutrality, may in some cases be preferable to the other.

This neutral salt is frequently sold under the name of *citrate of iron*, and having been ~~introduced~~ introduced to the notice of medical men, under this appellation, without its real constitution being explained, it is the salt generally referred to, where *citrate of iron* is ordered in prescriptions. Much inconvenience frequently arises from this circumstance, the dispenser being at a loss to know whether he should use the salt which the term *citrate of iron* most correctly represents, namely, the ~~acid citrate~~ acid citrate, or that which is more frequently intended by the prescriber, namely, the *ammonio-citrate*; the latter being imperfectly and improperly described by the term *citrate of iron*. It is very desirable that such a nomenclature should be adopted, in the case of these two salts, as would obviate this confusion; and it is hoped that the publication of the formulæ for both preparations may tend to effect this object.

*Lactate of iron.*—The preparation of this salt is effected, according to M. Louradour, by the direct action of a dilute solution of lactic acid on iron filings.

The lactic acid is obtained by the spontaneous fermentation of milk. To eight pints of milk add eight ounces of sugar of milk dissolved in water; leave this mixture, in an open vessel, exposed to the air for several days at a temperature of between 70° and 80°. The liquid being now found very acid, is to be neutralized with bicarbonate of soda; on further exposure this will become again acid, and must be neutralized by the addition of more of the alkali, and the same process repeated until the whole of the sugar of milk has been converted into lactic acid. The liquid is now to be boiled to coagulate the caseum, and the filtered solution carefully evaporated to a syrupy consistence. The product of the evaporation is taken up by alcohol, which dissolves the lactate of soda. Sulphuric acid, added in proper quantity to the alcoholic solution, forms sulphate of soda, which is precipitated, while the lactic acid is retained in solution, nearly pure. It may now be obtained by evaporation of the alcohol.

In a weak solution of this acid in water, iron filings are to be digested at a gentle heat for six or seven hours; after this, boil the liquor, filter, and concentrate the solution, until crystals of the salt are afforded on cooling. These crystals are to be put into a funnel, washed with alcohol by displacement, and dried quickly.

This salt, which is a lactate of the protoxide of iron, is generally met with in the form of a yellowish or greenish white powder. It is but little soluble in water; it reddens

litmus paper, and has a ferruginous taste. When dissolved in water, the iron passes to a higher state of oxidation, and the salt becomes yellow.—*Pharmaceutical Journal*.

### ON SOME PREPARATIONS OF ROSES.

THE combination of the infusion of roses with disulphate of quina, although it has been long in use, is not so eligible a preparation as it might be made, and the tannate of quina, which is formed immediately the mixture is prepared, has long since been objected to, and remarked upon by writers on pharmacy. It is generally stated, that this precipitate is re-dissolved by the addition of a little more sulphuric acid; but this is not correct.

To obviate this objection, I have undertaken a few experiments, and I find that by substituting an equivalent of diluted nitric acid for the diluted sulphuric acid, a clear solution of disulphate of quina is obtained.

Another method consists in depriving the infusion of the tannic acid, which may be done by means of isinglass, in the following manner:—

Take three drachms of rose-leaves, ten ounces of water: infuse cold for six hours.

Take of isinglass one drachm; water, at 110° to 120°, ten ounces. Dissolve.

Having strained the infusion, add the cold solution of isinglass, mixing them thoroughly; the tannate of gelatine is precipitated, and may be separated by filtration, and the requisite quantity of sulphuric acid and sugar should then be added. Cold water is recommended in this infusion, on account of the greater facility with which the precipitate separates; if hot water is employed, a milkiness in the fluid is produced, which passes in that state through the filter, unless it has previously stood twelve hours, or more; in using cold water it is important that the rose buds should be well broken down in a marble mortar, and the infusion should be occasionally stirred.

The infusion thus made dissolves a considerable quantity of disulphate of quina, and the astringent flavour, which is objectionable to some patients, is avoided.

In suggesting this modification of making the infusion of roses, it must be understood that I am not recommending to my brethren a deviation from the Pharmacopœia, but pointing out to the profession a means by which disulphate of quina and the infusion of roses may be elegantly combined.

This infusion is less liable to spoil than that which is made in the ordinary way.

Having proposed a method by which the infusion of roses may be deprived of its

astringent property, it may be well to publish a mode of concentrating this principle in cases where a styptic is desirable: for this purpose a strong tincture is a convenient preparation, and the following formula I have found to answer the purpose.

Rose petals, broken down, five ounces; Proof spirit, made with rose water, one pint. Digest for three days, frequently shaking, and press off. Digest the mass with half a pint of proof spirit for three days, press off, and mix the two liquids to form the tincture for use.

Disulphate of quina may be given with the tincture, and has been prescribed as follows:—

Disulph. Quinæ, gr. i.; Tinct. Rosæ, ℥xx.; Acid. Nit. dilut., ℥x.; Aquæ, ℥iiss.

This forms a clear solution, but if sulphuric acid is substituted for nitric, the precipitate occurs as in the common infusion of roses.

The tincture of roses has been prescribed in cases of hæmorrhage, also as a wash for the mouth, and may prove a useful styptic, mixed with solution of alum; and in cases of hæmoptysis, acetate of lead may be administered with it, if nitric acid be in slight excess.

Tincture of roses occurs in several of the old Pharmacopœias, but the preparation is similar to our infusion, and I am not aware that a formula for a tincture, according to our present acceptation of the term, has been published.

Percolation can be employed both for this preparation and the infusion, the petals being rubbed down with sand; but I have restricted my observations to that plan, which appears to answer very well, and is probably the most eligible in practice.—*Mr. Squire, in Pharmaceutical Journal*.

### MEDICINAL PROPERTIES OF SOLANUM TUBEROSUM.

FROM the leaves gathered at the proper period, and subjected to careful preparation, the extract, which I have the honour of offering to your notice, is procured, possessing narcotic powers of a very high degree.

In the sixth volume of the Transactions of the College of Physicians, is a paper, by Dr. Latham, on the Medicinal Properties of Solanum Tuberosum: it was read in the year 1818, since which time I have every reason to believe the extract has entirely fallen into disuse. Dr. Latham states that "an accident which he witnessed, occurring to an animal, ought to have induced him sooner to have made a trial of its narcotic powers upon the human body, and the effects pro-

duced in the following cases will, perhaps, entitle it to a rank of no mean estimation in the catalogue of medicines." The doctor then furnishes us with the detail of seven cases, in most of which the powers of the extract were particularly marked.

As a medicine the extractum solani tuberosi will rank between belladonna and conium: it has a decided tendency to produce relaxation of the bowels, and, therefore, will, in many instances, supply the place of opium. In a large dose it produces all the effects of narcotic poisons—headache, vertigo, stupor, &c.; but in moderate ones it seems to me to possess powers far more certain than either hyoscyamus or conium: it is particularly serviceable in chronic rheumatism, painful affections of the stomach and uterus.

Should experience confirm the virtues which I believe reside in this preparation, a great advantage will accrue from the large and certain supply always to be obtained: this is not the case with the other narcotic plants, hyoscyamus and conium, which, in some seasons, can with difficulty be obtained in sufficient quantities. The samples of extract and preserved juice upon the table, were kindly prepared for me by a member of your Society, Mr. Edwards, of Great Russell Street; they will be found, upon inspection, to possess not only the odour, but the taste, of the class of plants to which the solanum tuberosum belongs. I am aware that much time is required to ascertain the merits of any new medicine, and that nothing but the most careful and repeated observation can entitle it to rank among the articles of the materia medica; yet, from the trials I have made with the solanum tuberosum, I am induced to place considerable reliance on its powers, and have, therefore, much pleasure in offering it to the notice of this Society.

The dose of the extract is from one to three grains, three times a day.—*Mr. Dyer, in Pharmaceutical Journal.*

#### DR. WATSON'S LECTURES.

THE omission of two weeks in the publication of Dr. Watson's lectures was to suit his convenience. We have resumed them this week, and purpose to complete the course in the current volume.

#### ROYAL COLLEGE OF SURGEONS.

##### LIST OF GENTLEMEN ADMITTED MEMBERS.

*Friday, May 20, 1842.*

E. N. Sison.—J. Southern.—J. Douglas.—W. G. Eaststaff.—N. Montefiore.—M. Hare.—C. Gibson.—A. B. Steele.—H. T. Berry.—E. Pye.—P. Brotherston.—A. Taylor.—C. Robinson.—J. Rowlands.

#### MEDICAL ASSOCIATION AT BRENTFORD.

*(From a Correspondent.)*

WE are happy to hear that the medical practitioners of Brentford and its vicinity have resolved to form themselves into an association for the purposes of friendly intercourse and mutual advantage, to be called the "Brentford Medical Association." It will include all practitioners resident in the several parishes comprising the Brentford Union, who may be willing to join it, and be likewise open to those of the neighbouring districts.

#### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, May 14, 1842.

Small Pox .....	4
Measles .....	23
Scarlatina .....	10
Hooping Cough .....	37
Croup .....	10
Thrush .....	5
Diarrhoea .....	3
Dysentery .....	0
Cholera .....	0
Influenza .....	1
Typhus .....	30
Erysipelas .....	6
Syphilis .....	1
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	133
Diseases of the Lungs, and other Organs of Respiration .....	250
Diseases of the Heart and Blood-vessels ....	20
Diseases of the Stomach, Liver, and other Organs of Digestion .....	59
Diseases of the Kidneys, &c. ....	5
Childbed .....	5
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	0
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	100
Old Age or Natural Decay .....	47
Deaths by Violence, Privation, or Intemperance .....	16
Causes not specified .....	5
Deaths from all Causes .....	773

#### METEOROLOGICAL JOURNAL.

May	THERMOMETER.	BAROMETER.
Wednesday 18	from 42 to 58	30.04 to 29.58
Thursday . 19	37 58	29.81 29.73
Friday . . 20	35 59	29.66 29.67
Saturday . 21	46 59	29.67 29.68
Sunday . . 22	39 61	29.73 29.70
Monday . . 23	44 61	29.74 29.83
Tuesday . 24	41 60	29.83 29.75

Wind, on the 18th N. S.E. S. and W. on the 19th. S.W. on the 20th. S. and S.E. on the 21st, 22nd, 23rd. N.E. S. N. and W. on the 24th. Generally cloudy, frequent showers. Rain fallen, '13 of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, JUNE 3, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Treatment of the various species of jaundice. Diseases of the gall-bladder; of the spleen; of the pancreas. Diseases of the kidneys. Nephritis and nephralgia. Phenomena constituting a "fit of the gravel." Different kinds of gravel. Diseased states of the urine. Description and remedies of the lithic, phosphatic, and oxalic diatheses.*

IN the last lecture, after describing the symptoms, and causes, and treatment of acute and chronic inflammation of the liver, and after pointing out various other forms of chronic disease to which that organ is obnoxious, I spoke of *jaundice*. I offered you some comments upon its phenomena; and I indicated several different internal conditions upon which it may, in different cases, depend: and the lecture was closed with some brief hints respecting the *prognosis* of *icterus*. I have yet to consider the plans of treatment best adapted to the several varieties of the complaint.

Some kinds of jaundice are obviously and absolutely irremediable. From others the patients recover whatever treatment may be adopted, or without any treatment at all. Hence, as is customary in such circumstances, remedies the most worthless and absurd are extolled for their efficacy against jaundice. The patient gets well, and the drug last tried is held to have cured him. *Post hoc, ergo propter hoc*, is an argument more often applied I believe to the variations of disease, than to any other class of events.

757.—xxx.

In that species of *icterus* which occurs, sometimes, in connexion with acute or chronic inflammation of the liver, the treatment must be such as I yesterday recommended for acute and chronic hepatitis. Mercury forms an essential part of that treatment; and, unless the disease yielded sooner, I should urge the remedy until its effect upon the gums, and, therefore, its presence in the circulating blood, was apparent.

But to the *icterus calculosus*, mercury is not so well adapted. What we want is, not a more plentiful or a more healthful secretion of bile, but to get rid of the mechanical impediment to its excretion; or, at any rate, if that cannot be accomplished, to ease the acute sufferings of the patient. If fever attends the passage of a gall-stone, or if the epigastric pain should become epigastric tenderness, leeches may be applied, or a vein may be opened. The abstraction of blood may prevent any thickening of the distended gall-ducts; or it may perhaps relax their spasmodic closure around the calculus. But, in general, blood-letting is not of service nor requisite in this variety of jaundice. Our great resource for relieving the pain, and for loosening the presumed spasm, is opium, given in full doses: and I can add but little, with any advantage, to the directions laid down, on this head, by Dr. Heberden. "This pain (says he) can only be assuaged by giving and repeating opium and its preparations, as often as the continuance of the pain requires them; and because this pain is very apt to return, the patient should always be advised to keep by him, as long as the distemper lasts, pills of pure opium, each weighing one grain—or what is equivalent to them—that no time may be lost in quieting a sensation which is so difficult to endure. One of these pills may be taken as soon as the pain comes on, and it may be repeated once or twice in the course of two hours, if the pain require it; and I have often found it both safe and necessary to give much more."

2 B

This plan, of giving opium in the form of *pills*, is the more judicious, because, from their small bulk, they are more likely to be retained than draughts would be. Sometimes the stomach is so irritable as to reject even a pill. I would add, therefore, to Dr. Heberden's recommendations, that of throwing an opiate injection into the rectum; half a drachm or a drachm of laudanum, mixed with a small quantity of warm gruel. Another very useful expedient is the warm bath. If this cannot be readily procured, hot fomentations to the epigastrium, the mustard poultice, the turpentine stupe, are valuable substitutes for it. Dr. Prout states that he has seen more immediate alleviation afforded by large draughts of hot water, containing the carbonate of soda in solution (one or two drachms to a pint), than by any other means. "The alkali counteracts the distressing symptoms produced by the acidity of the stomach; while the hot water acts like a fomentation to the seat of the pain. The first portions of water are commonly rejected almost immediately; but others may be repeatedly taken; and after some time it will usually be found that the pain becomes less, and the water is retained. Another advantage of this plan of treatment is, that the water abates the severity of the retching, which is usually most severe and dangerous where there is nothing present upon which the stomach can react. This plan does not supersede the use of opium, which may be given in any way deemed most desirable; and in some instances a few drops of laudanum may be advantageously conjoined with the alkaline solution, after it has been once or twice rejected." The pain having been quelled, the bowels should be swept out by a brisk purgative.

When jaundice appears to have been suddenly engendered, by moral causes, the rationale of its production is obscure; and the treatment has a corresponding uncertainty. The bile, retained or readmitted into the blood, is supposed to operate, as a poison, upon the nervous system. But the mental state which precedes and seems to occasion the jaundice, may possibly be itself the cause of the nervous symptoms that follow. In other forms of the malady patients remain intensely yellow, often for a long time together, without becoming comatose, delirious, or convulsed. Not that this is conclusive. We know that a given poison may influence different persons very differently. The same dose of opium that will put one man to sleep, will stimulate a second to madness, and will have no sensible effect upon a third. In the very complaint before us, one patient is tormented with a universal itching, which we attribute to bile in his blood; and ten others remain free from that disagreeable feeling. If we were sure that the bile was

the material cause of all the cerebral symptoms, we might hope to draw some of the poison off by blood-letting: but we are not sure of this; and reasoning upon the matter helps us not much towards the cure. The lesson which experience has furnished amounts to no more than this: that active purging is sometimes followed by evident amendment, and ultimate recovery. I would bleed also, if the *pulse* warranted venesection, but not otherwise. In all the varieties of what, from its intensity and rapid accession, I may call acute jaundice, purging is strongly indicated: and we sometimes succeed in rectifying the whole morbid condition by thus applying a sudden *wrench* (so to speak) to the biliary organs; by giving, for instance, half a scruple or a scruple of calomel, and, a few hours afterwards, half an ounce of castor oil, with half an ounce of spirit of turpentine.

When *green jaundice* arises from hepatic disease, we can only palliate. Mild laxative and anodynes comprise all that such a state admits of. For the *icterus gravidarum*, delivery is the natural cure: it may sometimes be removed by the careful employment of aperients.

The *gall-bladder* has its own diseases, which I do not stop to investigate, for they seldom become the objects of specific treatment. Sometimes it is found shrivelled up, and nearly empty: sometimes enormously distended; sometimes ruptured. Of these conditions, the distension of the gall-bladder is the only one that we can ever expect to recognize in the living body. The bag then projects beyond the edge of the liver, and is palpable externally, forming an elastic tumor in the right side. Authors lay down marks for distinguishing a distended gall-bladder from abscess of the liver, and from an hydatid cyst; but they are not much to be trusted to; nor is the precise diagnosis of any great moment. The practical rule seems to be that, when the swelling is adherent to the parietes of the abdomen, we may puncture it, whatever is its nature: but under no other circumstances.

I have already, incidentally, described most of the morbid states of the *spleen* which are susceptible of relief from medicine: especially the enlargement of that body constituting the *ague-cake* of the fens, and occurring in connexion with intermittent fever; and that other kind of enlargement which sometimes goes along with hematemesis and melœna. The spleen is liable to tubercles also; to deposits of other specific tumors, and of bone; and to softening of its substance.

The best remedy for the *ague-cake* is the remedy for intermittent fever, *quina*. Purgatives also have the effect of reducing hypertrophy of that curious organ. One can-



tion, laid down by Dr. Abercromby, is that in splenic disease, mercury should be sedulously avoided, or rather such an employment of mercury as would risk tenderness of the gums. Dr. Williams, of St. Thomas's Hospital, states in a recent publication that he has made many trials of the *bromide of potassium* as a remedy in various disorders; but that he has satisfied himself of its utility only in cases of diseased spleen. Of this I know nothing.

Again, it may seem a slight to the *pancreas* to pass it over without noticing the diseases to which it is subject. But really those diseases appear to be but few; and they do not signify their existence by any plain or intelligible signs. I have, eight or nine times perhaps in my life, met with carcinomatous deposits in the pancreas. In every instance the head of the gland, that extremity which lies next to the bowel, has been the exclusive or the principal seat of the disease. I have known this change in the pancreas cause jaundice, by obstructing the bile ducts; and I have known it produce enormous and slowly fatal distension of the stomach by compressing the duodenum, and so preventing the free passage of the aliment through that gut. As to remedies for pancreatic diseases or disorders, I do not know of any.

Diseases of the *kidneys*—and disorders of their function—and alterations in the fluid they secrete—require more consideration. And I proceed at once, *in medias res*, to the subject of their *inflammation*; to *nephritis*: and it will be practically convenient to take *nephralgia*, or pain of the kidney, into the account at the same time. Nephralgia is commonly, but not always, produced by the transit of a urinary calculus from the pelvis of the kidney, through the ureter, towards the bladder. This constitutes what is called, in common parlance, a *fit of the gravel*. The symptoms are these:—pain, sometimes dull, but more frequently very severe, in the loins, usually on one side, and descending often along the track of the ureter of the same side; numbness of the corresponding thigh; in the male, retraction, and perhaps pain, of the testicle; a frequent desire to make water, which is generally high coloured; nausea and vomiting.

If to these symptoms there be added pyrexia, we learn the important fact that inflammation is present: we have the symptoms of *acute nephritis*. The passage of gravel from the kidney sometimes does, and sometimes does not, provoke inflammation of the gland. Nephritis is very seldom idiopathic. It may sometimes arise under the influence of cold: more frequently it is excited by calculous matter lodged in the

kidney; by a blow or fall upon the loins; by the internal administration of cantharides, or of turpentine. It is to the presence of fever that we look, to establish the inflammatory character of the renal affection.

Nephralgic pains require to be distinguished on the one hand from rheumatic, and on the other from colic pains. In lumbago there is pain in the back, and it may or may not be attended with fever; but the pain usually affects both sides, and is aggravated by such movements of the body as call the muscles of the loins into action, particularly by stooping. It originates, frequently, in some strain or effort, of which the patient is made painfully conscious at the time. It is seldom accompanied by any notable trouble of the urinary functions. When rheumatic pain extends from the back into the thigh, it mostly follows the course of the great sciatic nerve, and is felt down the outer part of the limb; whereas the pain that accompanies nephritis or nephralgia shoots rather along the track of the anterior crural nerve. Lastly, lumbar pain, depending upon rheumatism, is not attended with nausea and vomiting.

The pain of colic is often associated with sickness and retching: and it may occupy those parts of the abdomen which correspond to the place of the ureters. The urinary functions are undisturbed; and this is a capital point of distinction. The numbness of the thigh, and drawing up of the testicle, are sufficiently characteristic, when they happen; but they are frequently altogether absent.

Some years ago I was sent for by an exceedingly intelligent surgeon, who had been one of the house-surgeons at the Middlesex Hospital. I found him in bed. He told me he had a pain in the abdomen. It had begun in the morning in the situation of the right kidney, and soon extended round to the right side of the abdomen and the groin. Two days before, he had experienced a similar attack of pain in the renal region, stretching round into the hypogastrium. When I saw him he described the pain as lying more round the umbilicus than elsewhere; and he expressed a strong persuasion, from the feelings which attended it, that it would be removed by free action of the bowels. But he felt nausea; and had vomited some medicine which he had taken. He had no fever, no retraction of the testicle or numbness of the thigh, and the pain was not increased by pressure. Neither had there been any marked irritation of the bladder. He said, indeed, when I questioned him on that point, that he *thought* he had made water *rather* more frequently than usual the day before. I mention this case to show you the occasional obscurity of the symptoms. Here a well-instructed medical

man believed that nephralgia, existing in his own person, was colic. To my judgment, however, it seemed most probable that a small calculus had been passing from his kidney towards and perhaps into his bladder. I may as well tell you the event of the case, which interested me a good deal; for it exhibits the train of symptoms that are apt to ensue after nephritic attacks: although in this instance they were but slightly pronounced. His bowels were well acted on by a purgative, and the next day he was free from pain, and apparently well.

Two days after this, he had more frequent calls to pass urine than were usual with him, and having done so on one occasion, he presently felt the want again, and then passed a little blood. The urine had been of a clear amber colour throughout. At the expiration of two or three days more he called upon me to say that after making water he had perceived in the vessel a small crystallized mass, which he took out, supposing it to be (what it very much resembled) a small fragment of sugar candy. In fact he had been eating sugar candy, and thought some portions of it had fallen down between his waistcoat and shirt, and afterwards into the chamber-pot. He had the curiosity, he said (some misgiving he must have had too, for I had told him my own opinion of the nature of his attack), to put a small crystal from this fragment into his mouth; and as it neither tasted sweet nor dissolved, he suspected it might be a urinary concretion, and brought it to me. And sure enough it was so; a piece of very pure oxalate of lime, which he had been fortunate enough thus to get rid of. It was a quarter of an inch in length, and less than one-eighth of an inch broad, consisting of an aggregation of small crystals. It was exactly similar in appearance and colour to a piece of brown sugar-candy of the same size. It would pass, longways, into a large crow-quill.

That it was oxalate of lime was proved in this manner. A little separate crystal was heated to redness on a piece of platinum foil, by means of a spirit lamp and blow-pipe. By these means the oxalic acid was destroyed, and quick-lime left. This residue, moistened, and pressed into a powder on a piece of turmeric paper, gave the characteristic brown colour.

You see, then, that a nephritic affection may be mistaken for an attack of colic. In reference to practice, it would indeed be a mistake of no great importance, since the remedies that are proper in the one case are generally proper, or not improper, in the other. If the pain be attended with fever, antiphlogistic measures are alike indicated in each of the two diseases.

The numbness of the thigh, and the drawing up of the testicle, are analogous

phenomena to the pain which affects the shoulder in hepatic disorders. Irritation of one extremity of a nerve, situated internally, and belonging to an organ which is not endowed with a high degree of sensibility, causes sympathetic sensations in the sentient extremities of other branches of the same nerve, or of communicating nerves.

And this sympathetic affection of distant parts is sometimes attended (as I formerly observed) not merely with pain, but with some degree of inflammation also. The testicle occasionally swells, and becomes tender, during a nephritic attack. On the other hand, as the nerves which communicate with those of the testicle or thigh may or may not be implicated in the renal disorder, so we see how it happens that these curious symptoms, so instructive when they do occur, may frequently be wanting; as they were in the example I just now detailed to you.

When the symptoms I specified in the outset are attended with fever, we conclude that we have to deal with nephritis; and when inflammation of the kidney, however produced, lasts for a certain period, without abatement, *suppuration* is to be dreaded. Such suppuration is marked, sometimes, by the supervention of rigors, by throbbing perhaps, and it may be by a remission of the pain: but I believe it may take place without throwing out any such signals. Nay, I think it probable that inflammation, confined to the parenchymatous substance of the kidney, may arise, and run through all its stages, without denoting its presence or progress by any noticeable local signs; and that the sharp and peculiar symptoms ascribed by authors to acute nephritis manifest themselves only when the investing membrane of the gland, or its pelvis and excretory tubes, are involved in the inflammatory process. However this may be, suppuration leads to ulceration, to the formation of renal fistulæ, to the establishment of a purulent discharge, and hectic fever; and finally, in most cases, to a fatal event; whether the inflammation was at first idiopathic, or dependent on a calculus.

I may illustrate these remarks, by stating the heads of a case which has occurred to me since this course of lectures began. I admitted Caroline Barnard, a married woman, forty years old, into the hospital, on the 18th of October. Among other things she complained of pain in the situation of the right kidney. She had been ill six weeks, and at the commencement of her illness her urine had been very turbid, as indeed it still was; and she had experienced much pain and difficulty in passing it, and after it had passed. From that time she had frequent nausea and retching, and occasional numbness of the right thigh. She had been losing flesh fast; and her pulse was frequent. There was some tenderness discoverable in

the right renal region; and after a time a manifest fulness there, and hardness; and at length œdema of the integuments and *extreme* tenderness. She suffered also well-marked hectic fever, and had severe and repeated rigors. On the 4th of November, after a careful examination of the right loin, we satisfied ourselves of the presence of matter. I got Mr. Arnott, therefore, to see her, and to put a lancet into the abscess; and a large quantity of faint-smelling pus came out. She was greatly relieved by the operation; and a purulent discharge, mixed with shreds of cellular membrane, came away in abundance for some days: but in time the discharge ceased, the swelling subsided, and the opening healed. We began to hope that it had been merely an abscess in the *neighbourhood* of the kidney, irritating it and affecting its functions. But in three weeks after the abscess was punctured, the swelling was found to have recurred; and she again began to suffer much. The tumor was again opened, and pus of a more offensive character than before evacuated. In the early part of December she sunk.

We found the right kidney small, collapsed, and hollow; in some parts a mere flabby bag. On its posterior surface there was an opening, which formed a communication between the interior of the kidney and the abscess in the cellular tissue, which had pointed externally. The pelvis of the kidney was much dilated; and the substance of the gland destroyed to a considerable extent, by suppuration and ulceration. The ureter, where it left the pelvis of the kidney, was found to be impervious.

The other kidney was much enlarged; but of quite healthy and sound structure. That kind of compensation had occurred which I formerly mentioned as not unusual when, of double organs, one has been rendered incapable of its natural functions, and the other takes up its duty, and performs a twofold amount of work. The organ of which the function is thus increased, becomes hypertrophied. This woman did not die because there was not urine enough secreted; but she sunk under the wasting purulent drain, the irritation and pain she suffered, and the protracted hectic fever. In this instance the inflammation and suppuration occurred independently of the formation of calculous matter.

Sometimes the pus finds its way out of the body through the natural passages, and appears in the urine. This woman's urine was thought, by some of the pupils, to contain pus. It was quite thick, and of a yellowish colour. But heat rendered it transparent. You must not judge by a cursory look at the water. The effect of heat proved that the yellow material was not pus; the

impervious condition of the ureter showed afterwards that it could not have been.

When calculi exist in the kidney, they often give tokens of their presence there, by causing *bloody* urine. But bloody urine may proceed from various causes; and in conformity with my usual custom, I shall by and by offer you some general remarks on hæmaturia, as one of the hæmorrhages.

I showed you, at our last meeting, that gall-stones might inhabit the gall-bladder in considerable numbers, and be quite harmless, unless they attempted to escape from their prison, through the very narrow channel of egress from it; and I intimated that the same observation was often applicable to urinary concretions. Renal calculi do indeed, in many cases, produce abiding uneasiness, or frequently recurring pain, in the situation of the affected kidney, bloody urine, and gastric disturbance; especially when the concretions are shaken or displaced by sudden jolts or jarring movements of the body; or when the system is deranged by intemperate habits. But in many other instances these calculi cause no pain or annoyance, so long as they remain in the kidney: although they inflict horrible suffering, in general, while, for the first time, they are forcing their way along the narrow ureter. A concretion cannot be formed in a moment; yet the attack of pain often comes on in a moment, without any previous warning. After a while it remits, perhaps as suddenly; the calculus having passed (it may be presumed) from the ureter into the bladder; and then indications, more or less palpable, usually begin to declare themselves of its presence in that reservoir. Moreover, it is not uncommon to find calculi in the kidney after death, of the existence of which there had been no symptom manifested during life.

The *treatment* of nephritis—or of the nephralgia calculosa, when accompanied by fever, or occurring in young, strong, and plethoric persons—is just such as would be proper in cases of severe colic, or enteritis: and therefore it is that any mistake between these disorders at the outset is not of so much practical consequence. The objects of treatment are, to arrest the inflammatory process; to quiet existing irritation; and to obviate any fresh causes of irritation. Venesection, therefore, in proportion to the strength of the patient and the violence of the symptoms, will sometimes be proper: and it will always be advisable to take away blood freely from the neighbourhood of the suffering part by cupping. Warm fomentations; the warm bath; the injection of warm water into the bowel; these are all expedients of which practical men acknowledge the value. The warm enemata not only clear out from the large intestines any irritating matters they

might contain, but, from the proximity of the colon to the kidney, they perhaps have the effect of an internal fomentation. It is desirable also to get the bowels well acted upon by purgative medicines as soon as possible: the relief that follows free alvine discharges is often very marked. There is sometimes a difficulty, from the irritability of the stomach, in administering purgatives by the mouth. Calomel, however, will often be retained, when other substances are rejected. It is generally considered of importance to give those purgatives only which are not likely, by being absorbed into the blood, to irritate the urinary passages. On this account the *saline* purgatives are to be avoided. Nothing is so good as castor oil, if the stomach will bear it; or infusion of senna with manna may be used; or, if the stomach be very queasy, *pills*, composed of cathartic extract, and calomel.

When there is no fever, *i. e.* when the case is one of nephralgia, and a calculus is passing, after the intestinal canal has been cleared by a purgative, it will be necessary to give opium in full doses to allay the pain: and it may either be administered in the form of pill through the stomach; or introduced into the rectum.

When a person suffers what is called a fit of the gravel, the pain, I say, is at length very suddenly relieved, in general, in consequence of the calculus having emerged from the ureter and entered the bladder. We judge that this has taken place, first, by the cessation of the pain; and secondly, by the supervention, sooner or later, of the symptoms indicative of stone in the bladder: *viz.* a more than usually frequent inclination to make water; pain, referred to the extremity of the urethra, especially just after passing urine; and a stoppage and renewal of the stream of water during its exit.

The time which a calculus takes in travelling from the kidney to the bladder varies a good deal. The painful journey may be over in a few hours; or it may last two or three days. More rarely the symptoms continue, with irregular intervals of comparative quiet, for weeks. And sometimes, notwithstanding the peculiar pain, which amounts to torment, all morbid symptoms cease, and yet no calculus has passed, apparently, into the bladder: none, *i. e.* of the symptoms of stone ensue; no calculus is voided by the urethra; and none found in the bladder when the patient at length dies.

What is the explanation of these circumstances? Why, as calculi have been discovered in such cases in the *kidney*, it has been supposed that a concretion may get into the very beginning of the ureter, where it is a little larger than elsewhere, and give rise to the peculiar symptoms, yet never pass

fairly into that narrow tube; but at length fall back again into the pelvis of the kidney: when the symptoms cease.

But the same symptoms undoubtedly occur, occasionally, when there is no calculus at all. Sir B. Brodie has referred to this form of complaint. In people who live intemperate and luxurious lives, pain is apt to seize upon one renal region, and to extend round and downwards into the groin; and these symptoms will be followed by frequent, difficult, and painful micturition, the urine being unusually acid, high-coloured, and sometimes turbid. The whole irritation appears to be produced by this unhealthy urine: at least the complaint vanishes after cupping the loins, purging, the warm bath, and two or three full doses of colchicum given at short intervals.

Sometimes the little stone becomes immovably wedged in the canal of the ureter. If it completely shuts the tube, the urine accumulates behind it, and that portion of the ureter dilates. The obstruction usually proves fatal, by its influence upon the functions of the kidney, and thereby upon the whole economy. But if the urine finds a passage by the side of the impacted concretion, this danger is averted, or postponed.

When we have reason to believe, from the nature and course of the symptoms, that a calculus has come down from the kidney, and lodged in the bladder, then it becomes an object of deep interest to the practitioner, and of fearful importance to the patient, to try all means to bring about its expulsion before it grows too large to be voided. For grow it almost surely will, by the continual accretion of earthy matter upon its surface, if it remains long in the bladder. We know that it *may*, at first, be voided, provided the urethra be in a healthy and natural state: that whatever has passed through the ureter, may pass through the urethra also.

The objects to be kept in view are these: first, to procure a plentiful secretion of bland urine, wherewith the bladder may become filled; secondly, by lulling the sensibility of the parts concerned, to prevent or lessen that spasmodic constrictive effort of the sphincter of the bladder, which the presence of the calculus is apt to provoke; and, thirdly, to ascertain that the channel of the urethra is open and unimpeded.

To effect the first of these purposes, the patient should be instructed to drink freely of diluent liquors; such as barley-water, or linseed-tea, in which may be mixed a small quantity of the sweet spirits of nitre. To fulfil the second, he should take a full dose of opium at bed-time. By these means the pain and irritation which may have been produced by the calculus, will be soothed; and the bladder will gradually fill. He should



then make water, having first placed himself in such a position that the outlet of the bladder shall be at the lowest part of that receptacle. He may stand up, and lean forwards; or it may be well to make water while kneeling, in a warm bath. If these expedients are not presently successful, the urethra may be cautiously expanded, and habituated to the contact of a solid body, by the daily introduction of a full-sized bougie. Sometimes the calculus will follow the bougie, as it is withdrawn, through the urethra. In this way the patient will have a fair chance of getting rid of the stone. In this way a very near friend of my own, a physician now practising in this town, did expel a formidable, though not very large, piece of rough oxalate of lime several weeks after its entrance into the bladder. Out it came, at last, with a smart clink, which was music to his ear, against the chamber-pot. A gentleman was not long since sent up to me from Kent, by a former pupil of this College, with the following history. About a month before he had been suddenly attacked with acute pain in the loins, extending forwards into the left flank, and pelvis, with nausea and vomiting. For nearly ten days these symptoms continued to occur at intervals; then they ceased; and then he began to be troubled by a frequent and very urgent inclination to make water, and by pain after voiding it, just above the arch of the pubes. I gave him directions, in accordance with the plan just now mentioned; and wished him to allow some surgeon to explore the contents of his bladder. To this he would not, as yet, he said, consent. I saw him on the 2d of August. He returned into Kent the next day. On the 5th, while taking a walk, he was seized with a most imperative desire to make water, but found that he could part with none. Concluding that a calculus had entered, and stopped up the urethra, he was proceeding homewards, but was soon constrained again to try to empty his bladder: and then he had the satisfaction of feeling, and seeing, a stone fly out with great force: but, as he had turned towards a hedge, he could not find it. From that moment he was quite easy.

When a calculus of a certain size has once traversed the tubes that lead respectively to and from the bladder, others sometimes follow it with more ease. I shew you here a large concretion which was passed, or pined if you will, by a patient of mine without his knowing it. He is subject to epilepsy, which is probably eccentric, and excited by renal disease. He is closely and anxiously watched by his wife. One day last year she noticed that the urine he had just voided was slightly tinged with blood:

and she then found this oblong stone, which is composed of lithic acid, in the vessel.

If the renal calculus, after it has reached the bladder, cannot be got rid of by the expedients I have been recommending, the question arises whether medicine can do any farther good, or whether the patient is to be delivered over to the surgeons.

Most of these small concretions admit of being mechanically crushed into smaller fragments, which are then readily washed out by the stream of urine. Larger stones are extracted entire, through incisions of the bladder. Yet there are many cases in which, for various reasons, surgery declines to attempt the removal of vesical calculi. Medicine still offers to these unfortunate patients the means of mitigating, at least, their sufferings. But it often can do more than this. It is very important for you to know that judicious medical treatment may retard or prevent, and that injudicious medical treatment may promote and hasten the enlargement of such calculi. Let us briefly consider the principles by which our judgment and our practice, in this serious matter, must be guided.

I have described a fit of the *gravel*. We say that a patient has the gravel when he passes concrete matter with his urine, whether in the form of powder, of grit or sand, or of more massive calculi. We do not apply that term to the cases in which the urine is clear when recently voided, and warm; but throws down an earthy sediment as it cools: which sediment redissolves if the urine be again artificially heated. Now besides the different forms which the gravel assumes, of powder, sand, and little stones, there are (as you may have guessed from certain terms that I have been obliged to employ) several *kinds* of gravel; differing, I mean, in their chemical composition. The main signs—the pain, the sickness, the affection of the testicle, the subsequent bladder symptoms—are much the same, whatever be the nature of the solid matter that descends from the kidney, and lingers in the bladder. But other circumstances differ widely. The qualities of the water previously to the formation, and to the discharge of the sabulous matter; the state of the system at large. And it is quite impossible to treat cases of calculus in the kidney, or of stone in the bladder, with propriety, or safety, without constant reference to the condition of the urine. The morbid states of that secretion are of the greatest interest. I cannot undertake to enter upon that subject in much detail. Yet some outline of it I must attempt, especially where it touches upon points of practice.

You know, probably, that the urine voided by a person in health always exhibits



*acid properties*, always turns litmus paper red. Not that healthy urine contains a free acid; but only (according to Dr. Prout, who is the great authority in these things), that certain of the alkaline and earthy bases are not exactly neutralized, but exist in the state of supersalts. The pure lithic acid is nearly insoluble; but the lithate of ammonia is very readily soluble: and it is this which reddens the vegetable blues. Now, whether out of the body, or within it, the lithate of ammonia will, of course, be decomposed, if any acid be present in the urine, for which ammonia has a stronger affinity than it has for the lithic acid: and the latter will be thrown down, in the form of a red sand: little crystals, in point of fact, they are, very much like, in shape, size, and colour, to particles of Cayenne pepper. I shew you some collected by one of my out-patients at the hospital. He must have passed a peck of it while under my observation: and I am sorry (having lately lost sight of him) that I did not procure a large quantity for the museum.

Now this lithic acid, or red sand, or gravel, is liable to form in the kidney, if not in the bladder, and to concrete into calculi; and the calculi once formed, or, indeed, any solid substance, will constitute a nucleus upon and around which a farther and repeated incrustation of a similar nature is almost sure to take place. You will at once perceive the importance of doing nothing to aggravate this disposition to deposit lithic acid; but of trying to prevent, or stop it. If there be symptoms of stone in the kidney, or in the bladder, and we have reason to believe that it consists of lithic acid, there are medicines which would tend to render matters worse, and there are others of which the effect would be to correct the lithic acid *diathesis* as it is called. But how are we to know whether the presumed calculus be of that kind or not? or, rather, how are we to know that the lithic diathesis exists? Why, we learn that it exists by noticing the habitual qualities of the urine, and the habitual state of the patient's general health.

In the urine of persons who have the lithic diathesis, you will find that there are frequent deposits, after it has become cool, of reddish sediments, looking like brickdust, and, therefore, called *lateritious*. These sediments consist chiefly of the lithate of ammonia, tinged with certain colouring matters in the urine. Sometimes pure lithic acid appears, in the shape of fine sand, or in larger crystals. The urine itself is bright, of a dark coppery colour, like brown sherry. It is more acid than the urine of health, and gives to litmus paper a deeper shade of red. It is apt, too, to fall below the average quantity.

The presence of this diathesis is likewise accompanied, and so far denoted, by a tendency to feverish and inflammatory complaints. The patients are troubled with acidity of stomach, and heartburn; many of them are subject to gout or rheumatism. They are mostly also indolent and luxurious, or intemperate in their mode of life. Adults are peculiarly obnoxious to this condition of the system after the age of forty. But children, up to the period of puberty, are very liable to have lithic acid gravel.

Whenever a paroxysm of nephritic pain befalls a person whose time of life, the characters of whose health, and the qualities of whose urine, are such as I have been describing, you may conclude that the concretion which has occasioned the symptoms is of the lithic acid kind: and you may expect that such attacks will recur; for it is observed of these lithic acid renal calculi, that they are generally numerous in the same individual.

Now the formation of lithic acid may be controlled by the exhibition of alkaline remedies. You will find that free livers use alkalies to neutralize the excess of acid which results from their intemperate habits; the bicarbonates of soda, or potass. They do this, without any reference to the appearance of their urine, to prevent or appease the uneasy feelings produced by a debauch. But it is of importance to be aware that one of these salts is preferable for the purpose of obviating the lithic acid diathesis to the other. Soda will sometimes combine with the lithic acid, and form an insoluble salt, as hard, and as pernicious, when deposited around a nucleus, as the lithic acid itself. With potass there is no such danger. If it should combine with the lithic acid, the resulting salt is perfectly soluble, and will pass away dissolved, in the urine. Magnesia is also a good medicine in such cases; but it has this disadvantage, as I shewed you indeed before, that when taken habitually, it is apt to cause *intestinal* concretions: and these may be as dangerous as the urinary ones. One of the best modes of giving the bicarbonate of potass is in the common saline draught. The stomach has the power, apparently, of destroying the *vegetable acids*, and the remedial properties of the bicarbonate become thus equally certain with those of the pure alkali; and it is much less likely to derange or disagree with the stomach. Of course the mode of living ought to be changed when the lithic diathesis prevails; the patients should dine moderately and plainly, eating of one dish, and avoiding indigestible substances, and fermented liquors. But, as I mentioned in a former lecture, they will not, if they can help it, give up their accustomed indulgences: and they attempt, and we attempt, but the attempt is often made

in vain, to remedy disorders, which might with ease and certainty have been prevented.

You must take care not to give these alkaline remedies too long; nor in too great quantity. You must not push them to such an extent as entirely to destroy the acidity of the urine: for if you do, your patient is exposed to the same danger as before, but from an opposite cause. A *white sand* or gravel will be apt to form in the alkaline or neutral urine: and this will collect itself, by the force of aggregation, around any existing calculus, or foreign substance. The white deposits consist mainly of the triple phosphate of ammonia and magnesia; and if you examine collections of urinary calculi, you will find that they are sometimes made up of concentric layers; and one layer may be composed of lithic acid, and the next of the triple phosphates; and so on, as the condition of the urine has alternated. You must test the urine therefore, and see that it still reddens litmus, though perhaps faintly. The saline draught has always a tendency to make the urine alkaline; and thus it is, probably, that it proves of use in febrile disorders: but it is an absolute poison to those whose urine is already alkaline. Colchicum has a similar tendency to diminish the acid reaction of the urine. So has mercury. And I may tell you—speaking generally of morbid states of the urine—that it is much more easy to correct too great acidity than to rectify the opposite condition. We can almost always make acid urine neutral or alkaline: but to render alkaline urine acid is often beyond our power.

You will have observed, from what I have already said, that there is a morbid condition of the system, the opposite of that in which the lithic diathesis prevails. The phosphatic diathesis, namely; in which there is a readiness to deposit *white gravel*; composed of minute shining crystals of a triple salt, the phosphate of ammonia and magnesia. The way in which this is formed, according to Dr. Prout, is as follows. Healthy urine contains the phosphate of magnesia, which is very soluble; and, therefore, is dissolved in that fluid. But, under certain circumstances, the urea of the urine becomes decomposed in the kidneys, and ammonia is extricated, which combines with the phosphate of magnesia, and forms an *insoluble* triple salt. Sometimes with the triple phosphate just mentioned, there is also an admixture of phosphate of lime.

It is a fact of vast practical importance, that the tendency to the formation of the phosphates goes along with a debilitated condition of the system. Persons who have been rendered weak and feeble by over much toil, by mental anxiety, by insufficient nourishment, are very apt to pass water that is

alkalescent or but faintly acid, and to exhibit the tokens, in their urine, of the phosphatic diathesis. They are, for the most part, cachectic, sallow, languid, spiritless. The urine itself is pale, copious, slightly turbid or opaline, of a low specific gravity, and it does not smell like healthy urine: sometimes it has somewhat the faint odour of weak broth. It is occasionally alkalescent when voided; never more than slightly acid. As the urine cools, the white sand is thrown down; and in many cases a sort of film is formed upon the surface of the water, exhibiting, as you see it in different lights, all the colours of the rainbow: an iridescent pellicle. This has been found to consist of the triple phosphate. If you skim the pellicle off, by placing a bit of paper under it, and then suffer the paper to dry, you may distinctly see the little crystals. Urine of this kind speedily grows putrid and highly offensive. Sometimes it has a strong ammoniacal smell. You may estimate the intensity of the phosphatic disposition by the rapidity with which the urine becomes alkalescent. Occasionally the salt is so abundant that it is thrown down while the urine is still in the bladder; and the last portions of the issuing stream look milky.

Any thing which tends farther to depress the powers of the system will aggravate the phosphatic diathesis. When you find that your patient passes urine such as I have been last describing, which does not redden litmus paper, but on the contrary turns litmus paper that has been reddened by a weak acid, blue again, or even in some cases is alkaline enough to make turmeric paper brown—in such cases you must cautiously abstain from all remedies that are calculated to lower the vital powers; from saline draughts, and alkalies of all kinds; from mercury and colchicum: from bleeding; and even from active purgation; or you will add to the patient's dangerous weakness; and promote the more abundant deposit of the alkaline phosphates. But you may do more than abstain from what is hurtful: you may counteract the phosphatic tendency by a generous diet and by the exhibition of tonic medicines; bark, wine, and acids; the muriatic acid, or the nitric, may be given in such cases with vast advantage sometimes. Opium is also a remedy to be employed in this form of disease. No single drug probably has so much power in rendering alkaline urine acid; as opium. And it is indicated for other reasons; it composes the nervous anxiety to which these patients are mostly a prey.

I should state that the tendency to deposit the mixed phosphates, though sometimes idiopathic, is much more often consequent upon local disease in some part of the urinary organs, especially in the bladder and pros-

tate gland. It is also a frequent result of certain injuries of the back.

There is yet another diathesis sufficiently common and important to claim your best attention. I mean the *oxalic*: in which there is a tendency to the formation, in the kidney, of the oxalate of lime, or *mulberry calculus*; an epithet derived from the occasional resemblance of the concretion to that fruit, in respect to colour and inequality of surface. This diathesis is not so obvious as the other two, but it is no less real.

The urine differs much in its sensible qualities from that of both the preceding varieties. Unlike the urine of the phosphatic diathesis, it is bright and clear; unlike that of the lithic, it is remarkably free from sediment. The mulberry calculus is solitary also; or recurs at long intervals; and the diathesis prevails chiefly during the prime of life. In both these particulars the contrast with the lithic diathesis is striking.

The persons who manifest this disposition are usually dyspeptic; sometimes very much so, sometimes very slightly. They are uneasy during the assimilation of their meals; suffer flatulence when the stomach is empty; prefer vegetable diets to animal; are fond of sweets, especially of sugar. They are liable to boils and carbuncles, and to scaly cutaneous eruptions. According to their original temperament, they are nervous and irritable, or dejected and desponding in mind. A nephritic attack relieves them from all this discomfort for years perhaps. When the oxalic diathesis is strongly marked, the skin, Dr. Prout says, "is apt to assume an unnatural appearance difficult to describe, but the colour of which may be said to vary from dull greenish yellow in the sanguine, to dark olive or livid in the melancholic temperament."

The formation of the oxalate of lime within the body depends either upon the non-assimilation of oxalic acid taken with the food, or upon the mal-assimilation of saccharine aliments. Hence, as a general rule, both curative and prophylactic, *sugar* and other saccharine substances should be rigidly excluded from the diet of these patients. They should avoid, also, all kinds of fermented liquor. The young stalks of the *rhubarb*-plant, which of late years have come into such general use in this country for tarts in the spring; and *sorrel*, of which our neighbours, the French, consume a good deal in salads, and in other ways; both contain oxalic acid: and *hard water* contains lime. Dyspeptic persons who drink such water, and eat such articles of food, and are thus daily introducing, without suspecting it, the constituent ingredients of the mulberry calculus, are very likely indeed to incur the pain, and the exceeding peril, of a

renal concretion of that kind. You must see, therefore, the great importance of detecting the oxalic diathesis; and of forbidding, to those who have it, all such viands as contain the oxalic acid, and of recommending them to use pure water, even distilled water, for drinking. Animal food, and the stronger farinaceous matters, are best for them.

With respect to direct remedies for this diathesis, Dr. Prout tells us that he has seen more benefit derived from the mineral acids, alone or combined with tonics, than from any other. But the effects of these acids must be watched: and when they begin to produce a deposit of the lithate of ammonia, or of lithic acid, their use must be suspended. He recommends to patients who happen to be at a distance, the muriatic, or nitro-muriatic acid, till the lithate of ammonia, or lithic acid, begins to appear in the urine; or for a *month*. "By adopting," he says, "such a course of acids three or four times in the year, and by carefully-regulated diet, I have seen the diathesis gradually subdued, and at length removed altogether."

These observations will serve, I hope, in some degree, as landmarks, to guide your treatment of patients labouring under renal or vesical calculi, or presenting symptoms such as justify the apprehension that such fearful disorders may occur. It is impossible for me to do full justice to this interesting subject in these lectures; and I must refer you, for more minute information respecting it, to Dr. Prout's invaluable volume, and to Sir Benjamin Brodie's most instructive book on the *Diseases of the Urinary Organs*.

## LECTURES

### ON THE

## ANATOMY AND PHYSIOLOGY OF THE INTESTINAL CANAL;

MORE ESPECIALLY OF ITS MUCOUS MEMBRANE.

*Being the Croonian Lectures for 1842, delivered at the Coll. of Physicians,*

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### LECTURE II.

THE structure of the alimentary canal, which I propose to consider in the present lecture, is essentially the same throughout the vertebrate classes. Its walls are formed by three planes of membrane, connected by intervening layers of cellular tissue. These are the serous, the muscular, and the mucous tunics.

The external tunic, or the *serous*, needs little remark. It is so adapted, that,

while it involves the intestine, it yet offers no obstacle to the rapid distension of any portion of it. This is especially conspicuous in the small intestine, where the serous membrane, in its passage from the abdominal wall over the intestinal convolutions, forms a fold of considerable depth, the mesentery, between the layers of which the distended intestine finds a ready passage. The mesocola, or folds connecting the several portions of the colon to the abdominal wall, similarly favour distension, but to a much less degree.

From the peculiar manner in which the serous membrane is reflected upon the intestine, it is evident that it cannot form a complete covering to it. Along the line at which the mesentery in the small intestine, and the mesocolon in the large, adhere to them, a space is left not immediately covered by serous membrane. Here the vessels lie, and give off their branchings, to supply the other tunics.

In two parts of the intestine the serous covering is very imperfect; these are the duodenum in its middle and inferior thirds, the posterior surfaces of which are closely connected, in the greater part of their extent, to the wall of the abdomen; and the rectum, which, to a pretty similar extent, and in a like way, is left uncovered by serous membrane. Hence the operation of paracentesis vesicæ may be performed, in the latter intestine, with impunity as regards the peritoneum.

The descending colon is uncovered posteriorly to a considerable extent; and Amussat has ingeniously taken advantage of this fact to open the intestine here through the posterior wall of the abdomen, with a view to establish an artificial anus, in cases of permanent obstruction in the lower part of the large intestine, or of imperforate anus. The operation has now been sufficiently frequently done, in France and in this country, to demonstrate its practicability; and to show that it may, in some instances, be resorted to with benefit.

The *muscular* tunic of the intestine is developed in two planes; an external one, consisting of longitudinal fibres; and an internal, composed of circular fibres. The different arrangements, which these two layers of the muscular coat exhibit, in the large and in the small intestine, constitute a very manifest feature of distinction, between these two divisions of the canal. In the small intestine each layer is continuous all round the intestine; in the large intestine the longitudinal layer is developed in three bands, which commence at the root of the vermiform appendix of the cæcum, and extend in this form to the rectum, where they become expanded, and form a continuous tunic, as in the small intestine. These bands, being shorter than the intestine to

which they are applied, cause numerous puckerings of it in the transverse direction, with bulgings between them, which are the cells of the colon.

In the small intestine, the muscular tunic is most developed in the duodenum; in the large, it is thickest and strongest in the rectum.

I have said that the three planes of membrane which compose the intestinal wall are connected by intervening layers of fine cellular membrane. That which connects the mucous to the muscular tunic is deserving of a special description. It is the submucous cellular tissue, the layer to which Willis gave the name "*tunica nervea*." It is composed of a very fine areolar tissue, and is the nidus to support the numerous blood-vessels, absorbents, and nerves, which are necessary to the perfect organization of the mucous coat. Its characters are nearly the same throughout the whole intestinal tract; but it seems a little more abundant in the small, than in the large intestine. The seeds of morbid change are generally sown in this tunic, as might be presumed from its more immediate and extensive connection with the blood-vessels, on which the nutritive processes depend.

The *mucous membrane*, or most internal tunic, exceeds the others considerably in length. Hence the necessity of its being thrown into folds, that it may be conveniently packed into a smaller extent of space. Throughout the intestine, in the human subject, these folds assume the transverse direction, and in the latter part of the duodenum and in the jejunum, they exhibit considerable regularity. Here they form valvular processes, projecting more or less into the cavity of the intestine. These folds were denominated *valvulae conniventes* by Kerckringius, and still retain that name, although they evidently do not perform the office of valves. They are absent, or are very imperfectly developed, in the first portion of the duodenum, and also in the lower part of the ileum. It is worthy of remark, that these *valvulae conniventes* are peculiar to man. The folds of the mucous membrane of the large intestine likewise assume the transverse direction. They form large partitions between the cells of the colon, and they result from the puckering up of the intestine by the longitudinal fibres, and its constriction at various places by circular fibres shorter than the rest.

The next subject which ought to engage our attention is the minute anatomy of this important tunic of the intestine. Before entering upon the particular description of it, however, I propose to make some observations on the structure of the mucous membranes in general.

Mucous membrane, as has been long known, presents marked analogies, in point



of structure, to the skin. It is, like the skin, a covering; the internal integument, while the skin is the external one; it is continuous with the skin at the various orifices—the mouth, anus, prepuce, &c. It is prolonged into the ramifications of the various glands connected with it, as the salivary glands, liver, &c. as the skin is prolonged into the glands connected with it, the sudoriferous and sebaceous glands.

The continuity of these two membranes being clearly established, the one lining the interior of the body, and the other its exterior, it is evident that they must enclose all the other textures, muscles, vessels, &c. between them. These parts are all connected with the deep or attached surfaces of these membranes: the vessels, nerves, lymphatics, reach each by its adherent surface. Hence the free surface of each may be said to constitute the exterior of the body; that is to say, all matters connected with the cavity of the intestine, or the free surface of the skin, may be regarded as outside the body. Nor is it difficult to conceive that the one membrane, if placed in the position of the other, might perform its functions, and *vice versa*, and by a stretch of imagination, one might suppose that, were it possible to turn a man inside out, the mucous membrane would perform the function of skin; or the outer integument that of mucous membrane. As, indeed, Trembley affirmed took place in the polype: when it was turned inside out, its external covering, now become internal, took on itself the secreting and digestive action; and it often happens that a long protruded portion of mucous membrane, exposed to the action of the air, acquires much of the appearance, and many of the characters of skin.

A careful examination of the intimate structure of each of these membranes, and a comparison of them in the various situations in which they occur, not only completely establish the analogy between skin and mucous membrane, but demonstrate their continuity in a manner hitherto unknown to anatomists, and prove them to be different parts of one and the same membranous expanse, modified according to the office specially assigned to each. It is true that Bichat and others had regarded these two membranes in this light, but since their views were based on the indications of a coarse anatomy, and since, from their not having availed themselves of the microscope, they were unable to obtain a minute anatomical analysis, they failed in demonstrating, what they had so happily surmised.

In the description I am now about to give, I have great pleasure in acknowledging the assistance I have derived from the researches of my valued friend, Mr. Bowman, whose excellent investigation of the minute

anatomy of voluntary muscles is now well known to anatomists\*. In the present account, however, I shall chiefly follow my own observations.

I have said that mucous membrane lines the interior of the body, and that it permeates the ramifications of the elementary tubes of which the glands are composed. It, indeed, forms the walls of those tubes, and to analyse its structure, we cannot do better than examine one of them with high powers in the microscope. The kidney affords a favourable opportunity for this purpose, and in its *tubuli uriniferi*, we shall find the elementary constituents of mucous membrane. Let me here remark, that all examinations of this kind ought to be made on parts quite in the fresh state, for the cohesion of the minute elements of this texture disappears very soon after their vitality†.

It had been ascertained by Henle, that the wall of a uriniferous tube is composed of two elements—a transparent membrane, and an epithelial covering; and to Mr. Bowman is due the merit of having shown, that these elementary parts exist, wherever true mucous membrane is found, and that skin is similarly compounded.

The primary, and most essential of these elements is the transparent membrane. It affords, perhaps, the simplest and most beautiful example of a membranous expansion which can be met with in the body. It forms the basis, on which the epithelial element is deposited; and to it the mucous membrane owes whatever cohesive power, strength, or other physical property, it possesses. Hence Mr. Bowman has given it the appropriate name of *basement membrane*; and by this name I shall designate it in the remainder of these lectures. The basement membrane is homogeneous, perfectly transparent; the highest powers of the microscope cannot detect in it any definite arrangement of particles. The Germans would call it structureless (*strukturlos*). We are not without examples of the occurrence of a similar texture elsewhere in the body. The transparent tube, that envelops the fleshy elements of the primitive fasciculus of voluntary muscle, presents precisely the same characters. The wall of the nerve

\* Since this lecture was delivered, Mr. Bowman has published an able article, on Mucous Membrane, in the *Cyclopædia of Anatomy and Physiology*, Part XXIII.; to which the reader may refer for details beyond the scope of this lecture.

† The structure of mucous membrane has recently been described by a distinguished anatomist, from preparations made by prolonged maceration! I have no doubt that, if M. Flourens would examine, with the microscope, the layers which he has so skilfully dissected, he would find that they are composed of areolar tissue.



tubule, which contains the soft neurine, is equally transparent and structureless: so, also, are the posterior layer of the cornea (*membrana Demoursii* of the French), and the capsule of the crystalline lens.

The basement membrane does not admit vessels into its texture. These ramify on its deep or parenchymal surface, and are supported by the submucous cellular tissue, very distinct in the intestinal canal, or, as in certain glands, by a soft cytotblastema, which seems to be derived from recently effused *liquor sanguinis*, and from which probably the basement membrane and the epithelium derive their nutrition and growth.

FIG. 1.



*Human Kidney Tubule, magnified 300 diameters.*

c, basement membrane, from which the epithelium has been detached.

The basement membrane may be readily seen in other parts besides the kidney tubes. In the tubuli seminiferi of the testicle it is highly developed, and of considerable thickness (fig. 2). In the glands whose tubes

FIG. 2.

*Portion of Tubuli Testis of Guinea Pig, magnified 300 diameters.*

a a, basement membrane. b b, epithelium.

present vesicular terminations, it is also highly developed, as in the pancreas or salivary glands (fig. 3). In the Meibomian

FIG. 3.

*Terminal Vesicles of Pancreas of Dog.*

a a, basement membrane.

glands, it may be very distinctly seen; also in the tubes of the stomach, especially towards their deep, or adherent extremity\*.

Upon the basement membrane, the epithelium is formed, and is deposited in one or more layers. It is entirely composed of nucleated cells, varying much in size and shape, according to the manner in which they are packed, and the disposition of the mucous membrane, of which they form a part. To the consideration of this highly important element we shall return by and by.

A minute examination of the skin will enable us to see that it is constituted in a precisely similar manner to mucous membrane. According to the account generally given by anatomists, skin consists virtually of two layers, chorion and epidermis, the rete mucosum, which is counted a third layer, being now acknowledged on all hands to be only the recently formed epidermic cells, immediately applied to the papillary surface of the chorion. The chorion is described as a fibro-cellular texture, on the free surface of which, papillae are developed.

A vertical section of the skin (and it is best to select a specimen from a situation where the papillae are developed), when examined by a high power in the microscope, shews three distinct layers: first, epidermis, deposited in a series of lamellae, and distinguishable by the scale-like character of its component particles; second, a thin, extremely delicate, homogeneous, and transparent membrane, in every respect precisely similar to the basement membrane just described; and, thirdly, a layer of interlacing fibres, in which the elementary fibres of areolar tissue, and of the yellow elastic tissue,

\* I am satisfied that Wasmann is incorrect in describing the dark part of the mucous membrane in the pig, as composed solely of epithelial cells. These columns are, as throughout the stomach, contained in tubes of basement membrane, which I have seen several times.

abound, and which are destined to connect the skin to the adjacent textures, and to support the vessels which ramify in great numbers among them. This last layer is nothing else than the *chorion* of anatomists; but it is evident that the true elements of the skin are the layers superficial to it, the basement membrane and the epidermis, as in mucous membranes; and that the so-called chorion bears the same relation to those elements of the skin, that the submucous cellular tissue does, to those of the internal integument: in short, that the chorion is the more superficial part of the *subcutaneous cellular tissue*, upon which the basement membrane is expanded, and in which the nutrient and absorbent vessels, and the nerves of the skin, ramify.

And strong confirmation of this view of the anatomy is derived from the fact that these elements are found in the various appendages of the skin, which may be regarded as true offshoots from it. In the sudoriferous glands, which exist in vast numbers throughout the whole surface of the external integument, the basement tissue may be seen forming the wall of the convoluted tube, of which the gland is composed. A highly magnified view of one of these sweat-ducts, from the pencil of Mr. Bowman, is given in fig. 4; and here the

FIG. 4.



*Sweat-duct from human axilla, magnified 300 diameters.*

A, transverse section. B, longitudinal view.

basement tissue may be seen, as a fine line, *a*, forming the exterior of the tube, and the globular particles of epidermis, *b*, constituting its innermost layer. The vessels from which the secretion is elaborated, ramify around the external surface of the basement tissue. The same disposition of epidermic particles within, basement tissue external, and vessels surrounding, may be seen in the sebaceous glands, and in the follicles from which the hairs spring.

I have given a rough plan of the anatomical disposition of these constituents of the skin in fig. 5, where the dark line, B, represents the basement tissue, elevated at certain intervals into conical projections to form the papillary structure of the skin, and involuted into the form of a spiral tube, S, the sudoriferous gland, or into that of a sac with vesicular bulgings, F, the sebaceous gland, or to form a hair follicle, H, with a papilla, H', raised from its blind extremity, from which the hair grows. The epidermis, E, covers this basement membrane, to a variable extent, wherever it exists, and beneath it lies the subcutaneous tissue, the chorion.

Let me refer to another diagram illustrative of the structure of mucous membrane, which may be advantageously contrasted with that of skin to prove their identity of composition. (Fig. 6.) Here the dark line, B, represents the basement tissue; E, the epithelial covering; and C, the submucous cellular tissue, containing V, vessels, and N, nerves.

The relation of the blood-vessels and nerves to the true skin and mucous membrane, is worthy of observation. It may appear startling to those who are accustomed only to the coarse anatomy of these textures, that I should class them as *extra vascular*. It seems, at first, impossible to believe this of tissues which have so long been regarded as the most highly vascular textures in the body; of which preparation after preparation is preserved in the various museums of anatomy, to exhibit their extreme vascularity, and about which the skill of a Malpighi, a Ruysch, and Leiberkühn, were so long employed. It is evident from the description I have given of these membranes, and the diagrams I have referred to, that the elements of them are not *penetrated* by vessels, and that therefore they must lie exterior to the vascular plexus by which they are supplied, and a comparison of the measurement of the basement tissue will shew that blood-vessels cannot penetrate its substance. In the tubes of the testicle the basement membrane measures in thickness about *rebus* of an inch, but the smallest capillary vessel has a diameter of rather more than double that size. That these membranes require, for their nutrition and their other functions, a capillary plexus of great extent, is perfectly true; and that the seat of that plexus is the submucous or subcutaneous tissue, and not the mucous or cutaneous, I conceive to be abundantly proved by the observations I have above detailed. And the extreme tenuity of the proper elements of the skin and mucous membrane will sufficiently explain, why the vessels appear so superficial, when an injected specimen of these textures is examined.

The extent to which we are now able,

FIG. 5.—Diagram showing the basement membrane and epidermis of the skin, and its involutions to form the sweat-duct, the sebaceous glands, and hair follicle.

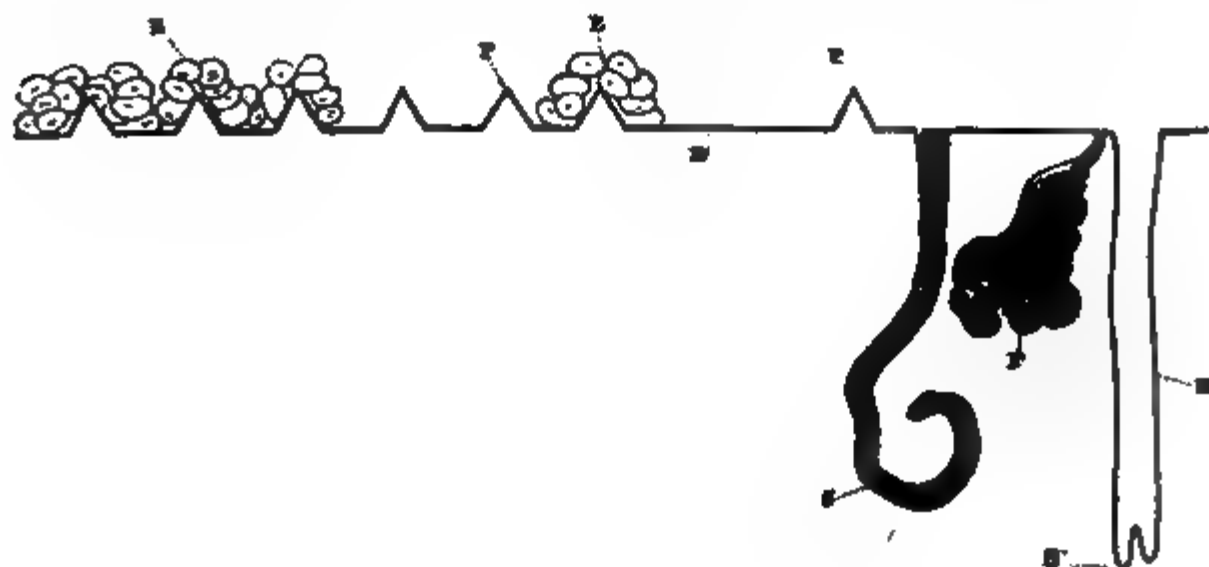


FIG. 6.—Diagram of simple expanded mucous membrane.

through the improvement of the microscope, to carry our anatomical analysis, by the aid of high powers, will serve to remove much of the vagueness of our views as to the relation of vessels to the elements of tissues. I have no difficulty in stating that not only the ultimate but the proximate elements, of all the tissues are *extra-vascular*; and that the tissues hitherto admitted by most anatomists, as of this kind, are mere products of a process of secretion. Cuticle, for example, nails, hairs, epithelium, horn, are secreted by the tissue on which they rest, and are separated from the vessels by that tissue. In mucous membrane and skin, however, the vessels come in immediate contact with the basement membrane, but do not penetrate it. In muscle, the elementary part, the primitive fascicle, composed of a sheath containing the sarcoous elements, is not penetrated by the nutrient vessels: they ramify in the interval between the fascicles. In the analogous tissue, nerve, the nerve-tubes containing neurine, do not admit vessels: they are extra-vascular. In bone the proximate elements are cylinders, the axis of each of which is pierced by a canal: the vessels are

lodged in the Haversian canals, and the osseous elements, nourished by the corpuscular canals, which are not blood-vessels, but which doubtless imbibe the nutrient fluid from the blood-vessels of the Haversian canals, are deposited around and between these canals. So it is with teeth: the dentine does not admit blood-vessels, but derives its nutrition from the vessels of the pulp and of the osseous cortex of the fang. In fat, again, the adipose membrane is as free from vessels as the sarcolemma of muscle, or the tubular membrane of nerve; but the vessels play around the vesicles which they form, as vascular circles.

Blood-vessels are every where surrounded and supported, more especially when they are destined for the nutritive process, by a soft blastema or elementary texture, either truly cellular, in the strict sense of that term, or areolar or fibrous. This is, no doubt, the seat of those changes upon which the growth and nutrition of the tissues depend. The blastema is itself the result, of an effusion of the liquor sanguinis, through the walls of the capillaries; and it is not improbable, that the same series of phenomena

(the formation of cytoblasts, of cells, and the ultimate transmutation of these cells into the elementary parts of the tissues) takes place in it, as Schwann has shown to occur in the primary development of the various textures.

And the views I have expressed, respecting the relation of blood-vessels to the tissues, are quite in accordance with what we know to take place, at the early formation of the embryo. The vascular system we know to be developed on a plane, intermediate to those, in which the various tissues appear. The so-called serous lamina, with which the development of the skin, nerves, muscles, &c. is connected, and the mucous layer, which gives rise to the internal integument, must therefore enclose the vessels between them; the vessels are consequently connected with the parenchymal surface of each layer; and this relation they continue to preserve in adult life.

I would propose the following subdivision of the tissues, founded upon the relation of the vascular system to them:—

1. Those tissues which are merely secreted products, and which are therefore separated by an intervening membrane from the vessels, *e. g.* epidermis, epithelium, hair, nails, hoof, horn.

2. Tissues whose proximate elements are in contact with vessels, but are not penetrated by them; *e. g.* muscle, nerve, mucous and serous membranes, skin, bone, cartilage, fibrous membrane.

3. Tissues which accompany and surround vessels, forming a blastema for the nutrition of other tissues, or a support for the vessels themselves, or adapted as a connecting link with other textures; and in this class I would enumerate the soft gelatiniform cellular membrane; and the areolar tissue.

But to resume the proper subject of my lecture.

The plan which I have given in the diagram, of mucous membrane, represents its simplest disposition, as a mere expanse. We find it, however, much more extensively arranged, in a complex manner, so as to obtain a great extent of surface, with less occupancy of space. It is then involuted, so as to form tubes, simple or branched, or mere depressions; or villi projecting into the cavity of the membrane in a manner analogous to that shown in the diagram of skin. This complex form of mucous membrane is represented by a diagram, fig. 7. All the elements of the mucous membrane will be found in these involutions, whether

FIG. 7.—*Diagram of an involuted Mucous Membrane, to shew the continuation of its elements into the foldings.*

E, epithelium; B, basement membrane; C, submucous tissue; V, vessels; N, nerve.

they form simple follicles, or villi, as in the diagram, or more complicated branchings, as in the ramifications of the secreting tubes or glands. (This point, however, has not yet been satisfactorily made out as regards

the ultimate branchings of the hepatic duct.) The apparent thickness, which the mucous membrane exhibits in some situations, is owing to these involutions being closely packed together, in a direction perpendicular

to the submucous cellular tissue, as is manifest in that of the stomach, and intestinal canal. In other situations, as in glands, the involutions of the mucous membrane are kept very much apart, by the intervening vascular ramifications, and their accompanying blastema, or cellulo-fibrous tissue. To judge of the real thickness of an involuted mucous membrane, we must carefully examine thin vertical sections of it under high powers.

*Of epithelium.*—The epithelium constitutes a highly interesting and important element of mucous membrane; whether we regard its immense quantity, or the rapidity and extent with which it is being continually thrown off, and reproduced. It is now known that the presence of this product is a characteristic of all secreting surfaces, serous, as well as mucous and cutaneous; and the doctrine is daily gaining ground, that by it the separation of, at least, the organic elements of the secretion are effected. We know that the epidermic scales are continually separating to be succeeded by new ones: so it is with the epithelial particles, whether in glands or on surfaces. The mucus which is formed on the surface of all mucous membranes is no more than the debris of those epithelial particles, combined with moisture, which have been pushed off by a new deposit on the surface of the basement membrane.

The newly deposited epithelium is generally, if not always, globular or spheroidal in its form; but it afterwards becomes modified in its shape by pressure, and the mode of packing.

When the surface is flat and expanded, the old epithelium assumes a flattened form, and is that variety which Henle calls *pflaster epithelium*, consisting of scales, generally polygonal, containing a nucleus, and resembling very closely the scales of the cuticle, which are formed and flattened in a precisely similar way (fig. 8).

FIG. 8.



*Epithelium scales detached from the surface of the uvula, magnified 300 diameters.*

In fig. 8 some epithelium particles of the scaly kind are shown; and in fig. 9 is an illustration of the manner in which these particles become changed from the spherical to the scaly form as they lose their water,

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and are compressed by the newly-deposited layer beneath.

FIG. 9.



*Vertical section of epithelium of the mouth, showing successive layers, and the flattening of the superficial ones.*

aa, superficial scales. dd, recently formed ones.

In most of the glands the epithelium retains its globular or spheroidal form, owing probably to the absence of compression and evaporation; but in the kidney, where the water excreted at the distal extremities of the tubes flows over, and compresses the newly deposited epithelium, the particles appear slightly flattened.

On the involuted mucous membrane of the intestines and stomach, and on that of the uterus and of the lungs, we find a third variety of epithelium particles, to which Henle has given the name *cylindrical*, but which I prefer to designate *columnar*. Each particle tapers at its adherent, and presents an expanded polygonal base at its free extremity: when viewed attached to a surface, these particles appear like a number of little pillars or columns placed perpendicularly to it. They may be best seen in the villi of the intestine, or in Lieberkühn's follicles; and their mode of arrangement is explained by the diagram of involuted mucous membrane (fig. 7.)

It is difficult to account for the peculiar form of this variety of epithelium: I am disposed to believe that it may be explained by the particles being arranged round a cylindrical surface in a radiating manner, and being therefore subjected chiefly to a lateral pressure.

Although I have stated that epithelium may be regarded as a secreted product, the cell-like structure of its particles shows, that its mode of formation is similar to that of the more complex tissues; and, therefore, that it cannot be regarded at first merely as a collection of excreted lifeless particles. It is, at its first formation, part and parcel of the living organism, and its particles have their appropriate vital endowments. And if the morphological character of the tissue were not sufficient to prove this, it is abundantly evident from the singular phenomenon which is always associated with it: I allude to the

2 C



rapid movement of the vibratile cilia, which grow from it, generally from the columnar

FIG. 10.



*Ciliated epithelium particles.*

- a, From human membrana tympana.  
b, From bronchial membrane.

variety, and which seem to derive their motor impulse, from the vital power of the particle, to which they adhere. A few of these particles, from the frog's mouth, will continue to exhibit the motion of cilia for many hours together under the microscope, provided they are kept moist, although all connection with the surface, from which they sprang, has been destroyed.

In my next lecture I shall apply these general observations to the particular anatomy of the intestinal mucous membrane.

## DIAGNOSIS OF MALIGNANT DISEASE OF BONE.

*To the Editor of the Medical Gazette.*

SIR,

I HAVE often availed myself of the pages of your journal to communicate to the professional reader facts and observations for which I had not a nook in any immediately contemplated publication; and you have already been good enough to insert some exemplifications of malignant disease in bone supplementary to what I have said on that subject in my *Outlines of Pathology*. I therefore now offer you an account of the most interesting case of this nature which has come before me.

The interest which attaches to this case is twofold; being, 1st, in its strongly marked but anomalous features, and consisting, 2dly, in the difference of opinion which these anomalies have led to among the best professional authorities. These authorities I will not name, but employ the first letters of the alphabet, being not their initials, to indicate them. There is no breach of

professional confidence in this matter, as the counter-opinions of each have been, with the knowledge of the others, declared at the time to the patient and his friends; and, indeed, as the case is not yet terminated, either side may yet be right.

A young man, aged 28, one of a numerous and healthy family, whom, however, with other members of it, I had before attended for various ailments, about February in last year, found that in walking his left knee would become weak and uneasy: it seemed to give at the back part. Gradually it became painful in addition, and, getting worse after some weeks, it became one night of a sudden slightly contracted; and there was some diffused swelling about the back part. The patient was under the care of a very intelligent practitioner in his neighbourhood; but he now wished to have more advice; and, as I was then absent from London, he consulted an eminent surgeon, whom I shall call A.

A recommended an alterative course of sarsaparilla and liquor potassæ, which the patient pursued without advantage: then, one eye becoming inflamed, and iritis threatening, calomel was added in repeated doses, so as quickly to affect the gums. The inflammation in the eye was thus dispersed; but the knee became worse than ever. About this time, the end of May last year, I returned to town, and the patient placed himself under my care.

He described himself as suffering most severe pain in the knee, within and through it, vaguely diffused, increased by moving the joint, but not by pressure upon the articular surfaces. The pain was most intense at night; the aching stretched down the leg-bone. There was no fluid in the joint, but there was general swelling about the popliteal space and hamstring tendons. The knee was moveable, but drawn to an angle of 150° or 160°; it gave the patient pain to alter the degree of flexion. He was confined to bed. He obtained some relief by continued hot fomentation.

The surgeon who lived in his neighbourhood had conjectured, very plausibly, that the complaint might have a syphilitic origin; and the supervention of iritis confirmed this view: but on the other hand, the pain continuing

and being aggravated after the gums were touched, and the absence of sore-throat or skin eruptions, were at variance with this supposition. A, I understood, had been unwilling to give a name to the disorder, but thought it more like rheumatism than any thing else; and the same view occurred to myself, and I thought it possible that it might have a gonorrhœal origin. I ordered leeches to be applied and repeated; the hot fomentation to be continued; wine and meat to be discontinued, and low diet substituted; and small doses of colchicum twice a day, with laudanum at night and some aperient with a few grains of blue pill. Under this treatment the patient improved considerably and rapidly; and after a month I began confidently to hope that he would get rid of the remaining pain, and of the swelling, and recover the use of his knee.

But now, about the beginning of July, a blister having been, by my advice, applied to the middle of the outside of the thigh, quite off the swelling, the patient ceased to improve. The blister was sore, and fretted him; the swelling, which had hardly lessened, became more uneasy. The blistered surface healed, but the knee got worse; in two or three weeks the swelling there and the pain had considerably increased, and leeches re-applied were of no service. Then I made several small issues on the inner aspect of the knee, which the patient fancied did him good; but the general swelling behind the knee increased, and now encroached forward over the inner condyle; there was more heat about the knee, and the subcutaneous veins were distended enough to be visible; the pain was only relieved by large doses of laudanum at night: during the day he now took, twice, a saline draught, containing three grains of the iodide of potassium. For a few days I entertained the hope that the swelling would suppurate.

But now a new view forced itself upon my conviction. I could make out, through the general swelling, what seemed the posterior aspect of a defined tumor, occupying the popliteal space, firm and immovable, growing, I presumed, from the posterior surface of the femur, immediately above the condyles, and pressing to either side the hamstring muscles: the popliteal artery

being to be felt upon it, seemingly elevated to no great distance below the skin. The tumor was masked by considerable general doughy swelling, especially upon the inner condyle, the inner hamstring muscles, and vastus internus.

Combining these present features with the history of the case, I came to the conclusion that the disorder must be malignant disease of the femur, probably (as the most frequent form) medullary sarcoma; but perhaps (to which I rather incline, from the prominence and firmness of the popliteal tumor at that time) one of the two forms of osteo-sarcoma—the cartilaginous or the gelatinous.

I felt it my duty to break this painful intelligence to the patient, and recommended him immediately to see A again; and two other surgeons, whom I will call B and C, were likewise fixed upon. At the same time I altered the general treatment; discontinuing the iodide of potassium, and giving him quinine, with meat and porter, to recruit his strength, for he had become thin, and pale, and worn, with low diet and suffering.

Of the three consultants, he first sent to B, who came and examined the knee, and expressed his apprehension that the complaint would indeed prove to be medullary sarcoma.

The patient then sent to C, who, after a careful examination of the case, in which he at first inclined to the supposition that the disorder might be inflammatory, concluded with the same formidable anticipation that a short time would prove the disease to be medullary.

And now an odd event took place. The patient was on the improved diet I had ordered, and seemed the better for it, when, on drawing himself into bed one night, he inwardly strained or somehow hurt the tumor, when the most excruciating pain followed, and lasted for some hours. But when he woke from the sleep which he had at last obtained through opium, the pain in the knee was much better; and in two or three days the general swelling was less; and some œdema of the foot, which had appeared, had very much lessened, and finally went away.

Then A was sent for, as a third consultant. After a full consideration of the case, he declared it to be his clear impression that the disorder was inflam-

matory only, and might terminate either by slow dispersion or by suppuration. Of course the patient was delighted at this mitigated sentence, and was most anxious that I should change the opinion which I had expressed. I told him I regretted that I could not; but that A's opinion was of much more value than mine, and more likely to be right, and that I most sincerely hoped that the end would prove me wrong. However, I advised that another opinion still should be taken. This, as it was natural, was not done, and the case was left to the judgment of A. This was towards the beginning of September. The patient now, I understood, continued better, in less pain, and the swelling, as I heard, had rather diminished. I heard again, that in November A had punctured the tumor deeply with a grooved needle; and that an artery seemingly had been opened, for the puncture had bled very profusely. The bleeding stopped with pressure, but there was rather more pain afterwards.

Then another surgeon, D, was consulted, who likewise gave it as his opinion that the swelling was inflammatory, and would terminate in an abscess. Finally, about March, another surgeon, E, saw the case with D, and declared it to be spina ventosa, and recommended pressure. This practice being resorted to, was followed by a great increase of pain and swelling; and at length, about a month ago, I was again sent to, the family being fearful that at last my original diagnosis would prove correct. I found the patient suffering severely, the knee of a vast size, from diffused general swelling and some synovia in the joint; leaving no doubt in my mind, at the first glance, that it was the malignant disease I had before supposed it, now at a more advanced stage; while no glandular enlargement having taken place in the groin leads me still to hope that the special form is the osteo-sarcomatous; although it is, of course, impossible now, and was formerly, with confidence to say of which kind of malignant disease the tumor consists. I found the patient, however, but half disposed to listen to my strong recommendation that the operation should be no longer deferred; and I therefore begged he would see another surgeon, whom I will call F. After some delay,

F was sent for, and pronounced the tumor to be medullary. B has likewise again been sent for, and has seen the patient, and passed the same sentence on the case. And D, I am told, has had the opportunity given him of puncturing the tumor, from which some grumous fluid alone escaped.

The patient, however, still hesitates, and puts off naming a day for the operation; for he is again in less pain; for leeches, which I recommended, and continued warm fomentations having been used, the knee is again a little easier and less swelled than immediately after the trial of pressure.

If the patient, as I trust he will, submits to lose the limb, I will communicate the result to your readers. He declares that he is now in my hands, and those of B, who, I may mention, is Mr. Stanley, and that he will adopt our advice; but I greatly fear he will not.—I am, sir,

Your obedient servant,  
HERBERT MAYO.

2, St. James's Place, May 22, 1842.

#### CASE OF OSSEOUS ANEURISM,

SITUATED IN THE INFERIOR THIRD OF THE FEMUR.

*To the Editor of the Medical Gazette.*

SIR,

SHOULD you deem the following case of sufficient interest, you will oblige me by giving it publicity in your valuable journal.—I remain, sir,

Your obedient servant,

HENRY HARGREAVES,  
Burnley, Lancashire, M.R.C.S.L.  
May 26, 1842.

*Case of Osseous Aneurism, situated in the inferior third of the femur, distending the whole of the popliteal space, advancing anteriorly, and causing great deformity of the right knee-joint, which was treated for diffused popliteal aneurism, by placing a ligature on the femoral artery in the superior third of the thigh; terminating in purpura and death.*

Jonathan Driver, aged 19, thin and delicate-looking, was admitted into the Union Workhouse, on the 5th of April last, under my care.

*History.*—About five months ago he injured the right knee, near the inner

condyle, by slipping over a stone bank. The accident gave him little inconvenience at the time, or on the following day, but at the end of five weeks he perceived a slight swelling situated on the inner side of the knee-joint, and occasionally communicating to the touch a degree of beating. This, however, was not at first attended with very great inconvenience, until the tumor gradually increased in size from the circumference towards the centre, which caused pain and stiffness from its bulk, and his incapacity from using it. In the commencement it was seen by a noted bonesetter; and two days before he was put under my care he was visited by a surgeon who said the swelling contained matter: he punctured it with a lancet, but instead of reaching pus, nothing but bright-red blood followed the incision. Present symptoms and appearances of the limb are: general constitutional derangement, with dry skin, furred tongue, thirst, small and rapid pulse, insomnium. Ordered the following:—

℞ Mist. Febrifuga, ℥vj.; Antim. Tart. gr. i. ft. mist. Coch. ij. L. 3tiā quaque horā sumend.

℞ Hyd. Chlorid. gr. v.; Morph. Ant. gr. 4, ft. pulv. horā somni sumend.

℞ Haust. Sennæ primò mane sumend.  
Lotio evap. genu.

Absolute rest and low diet.

The tumor has attained an enormous magnitude: the circumference round the knee joint measures 24 inches, whilst the normal side is 11 inches; this difference causes a vast deformity of the whole limb. It is accompanied with a diffused hardness, as if it was caused by deposited fibrine, which fills up the whole of the popliteal space, extending as high as the inferior third of the thigh, and advancing towards the internal condyle and front of the joint, which is very considerably infiltrated with serous fluid, which gives to the tumor in the latter situations a globular shape, and a very elastic feel on pressure: on mediate auscultation there is a dull but distinct pulsation heard in the course of the popliteal artery, but neither pulsation or tremor is communicated to the touch. A very indistinct pulsation could sometimes be heard at the internal condyle, but it could not be distinguished at all times. The stethoscope was only of negative assistance, and did not enable me to detect any abnormal sound. The

nerves, veins, and lymphatics, are exposed to a very considerable degree of compression; the normal relations of the bones and muscles are altered; the motions of the joint are impeded and painful; there is œdema of the leg and foot, with pain and numbness; the superficial veins are greatly enlarged, but there is no discoloration of the integuments; the limb feels cold; pressure produces no perceptible change in its volume; the inguinal glands are not affected. After very carefully examining the case, on three separate occasions, I came to the conclusion (although it was surrounded with a great deal of ambiguity), that it was a diffused popliteal aneurism, and determined upon tying the femoral artery, before having recourse to amputation, the only other alternative; more especially should the grooved needle on being introduced favour that opinion. A consultation was held with three other surgeons on the 10th of April, when the propriety of the proposed operation was assented to. The patient offered no objections to any operations being performed which might favour the chances of retaining the limb, but objected most strenuously to have the limb amputated, although the risk, probable result, and consequences, were fully stated to him.

Before proceeding to tie the artery, which was on the 11th April, a grooved needle was introduced into the swelling over the inner condyle, when a quantity of serum, mixed with arterial blood, flowed along the groove. The artery was exposed in the superior third of the thigh; not more than a tea-spoonful of blood was lost during the operation; and nothing unusual occurred. The wound was dressed in the usual way, and a flannel roller placed on the member. In the evening of the same day there had been no bleeding from the wound. He complains of great pulsation in the femoral artery, with alternate heat and cold in the limb. Pulse 90.

To have tea, gruel, and toast-water.

12th.—Slept but little during the night, although he had an opiate; pulse 100; tongue dry and furred; thirst; temperature of the limb natural; circumference 22½ inches.

Ordered ℥ss. Ol. Ricini.

13th.—A little sleep during the

night; pulse 95; tongue moist; bowels relieved; circumference 21 inches.

To have a few oranges. Arrow-root.

14th.—Slept better; pulse 90; tongue clean; circumference 20 inches; appetite good.

15th.—Wound in thigh to be dressed; it looks healthy. Pulse 95; bowels free; restless; circumference 18½ inches; œdema of the leg entirely subsided.

R Hyd. Chlorid. gr. iv.; Morph. Acet. gr. j. ft. pulv. divid. in chartâ viij. 1 quâque 6tâ horâ sd.

16th.—Pulse continues quick; sleeps better; appetite very good; circumference 17½ inches,—after which time it did not diminish materially.

Ordered rice, milk, eggs, and sago gruel.

17th.—Pulse small and rapid; vesications have appeared on the surface of the tumor.

18th.—Wound looking healthy; pulse 95; tongue clean; sleeps well.

To have beef-tea.

19th.—The tumor feels considerably softer above the knee, and in the popliteal space. Pulse 90; bowels regular.

To have a pint of porter daily.

20th.—In every respect progressing favourably.

22d.—Sleeps well. An attempt was made to remove the ligature, which remained firmly attached.

Omit the calomel and morphia.

24th.—The vesications have entirely disappeared; the tongue looks clean; skin cool; pulse 85. Rather restless.

To have an opiate at bed-time.

25th.—Sleeps better; in other respects the same as yesterday.

26th.—The wound is nearly healed, but the ligature is firmly attached.

27th.—Slight ulceration of the cuticle; pulse 90; thirst; pain in the limb.

R Mist. Febrifuga cum Antim. Tart. 3tiâ quâque horâ sd.

R Ol. Ricini, ʒss. statim sd.

28th.—Slight epistaxis, which yielded to styptics; there is a little ichorous discharge from the ulcerated integuments, and a sensation of fluctuation. Epistaxis has returned; plugged the anterior nares with lint soaked in Tr. ferri sesquichlorid. The limb is gra-

dually enlarging. A consultation was again held concerning the propriety of removing the limb; this step, however, was not considered admissible, for, on examination, petechiæ were discovered on the affected member, which rapidly spread over other parts of the body; and the disease very speedily shewed itself to be genuine hæmorrhagia petechialis. The mucous membrane of the mouth was studded with petechiæ, and the gums were disposed to bleed.

R Acet. Plumbi, Tr. Opii, et Acid. Acetic. were given in combination. Port-wine negus, and strong animal jellies.

Haust. Anodyn. h. s., sd.

29th.—Ulceration of the integuments spreading superficially; pulse small and rapid; petechiæ more numerous. The hæmorrhage from the mouth and fauces is constant; great pain in the limb; little or no sleep; the swelling has increased to its original size.

Haust. Anodyn. rep. st.

30.—Seems very much exhausted, with cold extremities; pulse scarcely perceptible; intellect not in the least impaired; gradually sinking.

May 1st.—Died this morning, about 8 o'clock, A.M. There was no admixture of blood either in the urine or fæces.

*Post-mortem appearances eight hours after death.*—On making an incision, and exposing the popliteal space, a quantity of serous fluid flowed out; on cutting deeper, I exposed a complete sac extending as high as the middle third of the thigh, which was full of a sanguineous fluid, and contained fibrous concretion, a semi-cartilaginous substance interspersed with a little ossific matter. The sanguineous fluid, which was of a very dark colour, independent of the other component parts occupying the sac, amounted to about four pounds. The lower extremity of the os femoris was not enlarged either above or below where the sac had made compression, and appeared to have undergone no change, but presented a honeycomb appearance where the tumor had exerted pressure, and which had caused partial absorption of the ossific matter in that situation. It was difficult to say whether the sac itself was composed of the periosteum, or had a distinct origin, but the tendons, muscles, nerves, and blood-vessels, did not present any abnormal appearance, or give the slightest grounds to



suspect that the affection had a malignant origin or tendency, as it chiefly contained a sanguineous fluid. The popliteal artery, vein, and nerve, were situated very superficially, and upon the sac. The wound made to expose the femoral artery in the operation had healed up, but the ligature was firmly attached; it was re-opened, and the lining membrane of the artery exposed above where the ligature had been placed, when a firm coagulum (of a pyriform shape) was discovered, completely plugging up the artery. It was about three-quarters of an inch in length. The sac had no communication with the popliteal artery, which appeared in a most healthy state. I feel sorry no general examination of the body was allowed. Even the examination of the morbid limb was done without the knowledge of the friends: no time for injecting the arteries could possibly be obtained, which preparation would most probably have facilitated our coming to a more definite and correct knowledge of the origin and progress of the morbid action. In short, the general appearance of the sac and its contents was exactly such as I have often seen when examining an aneurism after death.

**REMARKS.**—I have been induced to publish this very interesting case from the obscurity in which the principal symptoms were from the first involved; the rarity of its occurrence; the great difficulty in forming a correct diagnosis, in consequence of the enormous bulk it had attained, and its unyielding structure, when I first saw the patient; and more especially from its being connected with one of the most important operations in surgery. The post-mortem appearances have quite satisfied me that the disease was not of a malignant growth, as in that case it would have been formed of a different structure, would not have presented so uniform an appearance, and the morbid condition would have been more fully developed. There would also probably have been some fungoid excrescence protruding from the puncture made with the lancet, independent of the symptoms pathognomonic of malignant diseases. I had fully determined upon removing the limb as a last resource, but did not think myself justified in taking this step before I had tried the

effect of tying the femoral artery. The rapid diminution in the size of the tumor, and the favourable condition of the patient, for some time led me to anticipate a successful termination; but unfortunately the supervention of purpura rendered amputation impracticable, as it was evident the patient would sink whatever steps were taken. I cannot suppose that the small doses of calomel and morphia could have induced the purpuric tendency, which were prescribed with the view of anticipating inflammatory action—that the patient might the more readily have been brought under the mercurial action, should consequences have demanded it, for there was not the slightest approach to ptialism, and it was omitted altogether after a few days. I find the nearest description to the present case, spoken of, under the head of osseous aneurism, by Mr. Syme, of Edinburgh, in his valuable work on Surgery.

#### CONTRIBUTIONS

TO THE

#### CHEMICAL PATHOLOGY OF SOME FORMS OF MORBID DIGESTION.

BY GOLDING BIRD, M.D., A.M., F.L.S.

Member of the Royal College of Physicians,  
Physician to the Islington Dispensary, and  
Lecturer on Medical Physics at Guy's Hospital.

(Continued from p. 384 of preceding volume.)

In my previous papers I have particularly drawn attention to the characters of the fluid ejected from the stomach in those cases of gastric affection in which no evidence of organic, or at least of disorganizing, affection existed, and have stated, as the result of my own experience, that so long as no marked organic disease has occurred the vomited fluids are *always colourless*\*, and when possessed of acidity at all, never contain any considerable quantity of a free acid; care being taken to trust to chemical evidence, and not to the feelings of the patients, as our guide. When, on the other hand, mere functional lesion has given way to structural mischief, the vomited fluids become more or less coloured, not from the accidental admixture of bile or ingesta, but persistently so from the

\* Page 283 of last volume.

presence of a peculiar brownish colouring matter, most probably a modified form of the colouring matter of blood. The organic lesion need not by any means be actually seated in the stomach to produce this change, the same effect on the secreted fluids being produced by disease limited to the pyloric orifice, or even by organic mischief affecting the liver, or other organs in the neighbourhood, providing its effect be to obstruct the egress of ingesta from the organ.

To avoid any unnecessary repetition of cases bearing upon the same subject, I shall content myself with detailing one only at length, and giving an account of the observations I had occasion to make on the fluids ejected from the stomach.

CASE XVIII. — *Scirrhus pylorus.* — *Hæmatemesis and melæna.* — *Persistent brown acid vomitings.* — *Death.*

J. H., æt. 44, a fine, well-formed man, with a face presenting a remarkably sallow aspect, like that of malignant disease, came under my care in the summer of 1840. He was born in London of healthy parents, and no trace of hereditary disease existed in his family. When a boy of eleven years old, he became the subject of malignant disease of the right knee, for which he was admitted into Guy's Hospital, and the limb was removed by the late Sir Astley Cooper. For the last twelve years he has been employed as a tax-collector; previously, he worked as an engraver for ten hours a day, living very freely, and often escaping into the country to amuse himself with his gun. In these excursions he became exposed to great alternations of temperature, and lived irregularly. He never married; usually partook of at least two or three pints of malt liquor, and several glasses of gin and water, in the day. In 1836, he first suffered from pyrosis, the attack being preceded by burning heat at the scrobiculus cordis, and ending with gushes of limpid tasteless fluid. Of this ailment, which lasted about six weeks, he ultimately recovered under the care of Dr. Elliotson. From the period of this attack, he suffered severely from gastrodynia, which, although resisting the action of other remedies, generally yielded to nitrate of silver administered in small doses. Frequently during

these attacks, his evacuations were pitch-like, very probably from an admixture of blood. The paroxysms of gastrodynia have persistently got more severe during the last three years, never being absent for more than a few days, except in one instance, when they vanished for several weeks, which respite was attributed to the mental excitement dependent on a parochial election, in which he was much interested. In July 1840, he consulted Dr. Bright, who detected the previously overlooked malaria; he had just stepped into his gig on leaving Dr. Bright's house, when a sudden sensation of extreme faintness overpowered him, and a copious gush of blood rushed from his stomach. The hæmatemesis continued for some days, and reduced his strength so much as to confine him to his bed, and soon afterwards I was requested to see him (August 1840.)

On my visit, I found him labouring under intense burning pain in the region of the stomach, most intense at its right extremity, with frequent vomitings of very sour and bitter, but colourless, fluid, holding in suspension numerous brownish flocculi. He was often free from pain until he partook of food, and then the gastrodynia, with pyrosis, came on very quickly, and the moment he turned on his right side full vomiting always commenced, followed by an interval of ease, which generally lasted until he again took food. The evacuations from the bowels contained a considerable quantity of black pitchy matter, evidently changed blood. I succeeded in checking the melæna, and partially allayed the vomiting by the exhibition of oxide of silver, keeping the bowels free by sulphate of magnesia in acidulated infusion of roses. His strength gradually returned, and soon feeling well enough to go into the country, I lost sight of him until October.

Oct. 28. — During the last two months, he has suffered from frequent attacks of vomiting after his meals; these do not appear to be influenced by any modification of food, and, as a general rule, are less frequent when the bowels are constipated, and if, by any chance, he has passed a week without a motion, he has generally lost the vomiting altogether. He yesterday dined moderately, taking a mutton chop and a glass of ale; he felt comfortable, and

remained so until his tea, when he became uneasy, and about an hour afterwards was seized with intense pain at the epigastrium, with distressing flatulence and spasm, so intense that he was "bent double" by it, and appeared like a person suffering from colic. At half-past eight he vomited half a pint of very sour and bitter fluid. He went to bed, and immediately on lying on the right side a tremendous escape of flatus occurred, with gushes of fluid; not, however, experiencing the slightest relief until he arose, when the vomiting ceased. During the night he was so hysterical that he wept like a child. His face is much more sallow than when I saw him in the summer; his sclerotic is pearly; lips exsanguine; surface of the body unperspirable. He always suffered from an intense throbbing pain in the occiput on taking food. On examining the abdomen, a tolerably hard and well-defined tumor could be felt in the region of the pylorus: pulse feeble, thread like, but compressible.

R Hyd. Chlorid. gr. v.; Conf: Opii, gr. iij.; fiat Pil. statim. sumend. et post horam injiciend Enema Terebenthinæ.

R Morphine Hydrochlor. gr. iij.; Argenti Oxydi, gr. iv.; Ext. Conii, ℥ss. M. divid. in pil. vj.; sumat. j. 4ta. quaque hora vomitu seu dolore urgenti.

29th.—The bowels acted once, but scantily; intense gastrodynia came on in the evening, but no sickness until going to bed, and then the moment he turned on his right side violent vomiting came on, and lasted almost unremittingly during three hours, when he fell asleep, and awoke much refreshed.

Nov. 12.—From the date of last report he has been somewhat easier, occasionally passing a day without vomiting. After passing a tolerably comfortable day, he went to bed, and felt nearly free from pain until he turned on his right side; a gush of pale brown fluid nearly immediately rushed from his stomach: this was exceedingly acid and bitter. He encouraged the vomiting by copious draughts of warm water, and thus relieved the burning heat and gastrodynia which distressed him. During the vomiting he suffered severely from a twisting sensation about the umbilicus. In addition to the pills, he was

ordered counter-irritation over the stomach, and lime-water, with milk, occasionally. The bowels remained exceedingly constipated, and required, every two or three days, a purgative; but of whatever kind this may be, and whether administered as an enema or by the mouth, it invariably brings on vomiting during its action, or, if that were previously present, greatly aggravates it.

Nov. 17.—During the last few days he has been better, and remained to-day pretty well until tea-time, when, after partaking of a cup of warm fluid, violent gastrodynia and vomiting came on: altogether he brought up rather more than a gallon of fluid. On going to bed he was somewhat relieved, but during his sleep, on turning on the right side, the vomiting came on as severely as ever. He has emaciated greatly lately, and his face has assumed an active tint. I ordered an emetic of sulphate of zinc.

18th.—Under the influence of the emetic, he vomited about two quarts of brown acid fluid, in every respect like that brought up the preceding evening. He immediately afterwards ate a dozen oysters, and drank a little of Webb's magnesia-water, which often afforded relief to the gastrodynia and vomiting.

23d.—The bowels having been confined for some days, an enema containing an ounce of oil of turpentine was administered. This acted on his bowels without producing sickness. He went to bed, and, as invariably occurred on lying on the right side, a severe attack of vomiting came on, and about a quart of acid fluid rushed from the stomach. He is exceedingly exhausted; the surface is cold and clammy, but the gastrodynia remained so intense that, of his own accord, he took an emetic in the hope of getting some relief.

24th.—The emetic caused a considerable quantity of fluid, paler and less acid than usual, to be vomited.

Dec. 10.—From the last date this poor fellow has been rapidly sinking. His bowels never act without a purgative enema, which is administered about every three or four days, and always excites the most distressing vomiting. Some amount of rest is obtained by small opiate enemata, and his strength is supported by sipping jelly, beef-tea, and an egg beaten up with sherry. To-day he had another

terrific attack of vomiting, the character of the fluid being like the last. The tumor about the pylorus became decidedly more evident from his emaciation, and in about three weeks he expired, completely starved to death by the almost complete impossibility of getting food past the pylorus.

The post-mortem examination completely confirmed the accuracy of the opinion formed during life. The stomach was enormously distended, its greater curvature reaching nearly to the pubis: its mucous membrane was universally congested and softened. The pyloric orifice was so extremely narrowed, that the point of a probe entered it with difficulty: it was completely surrounded by a structure of scirrhus hardness, and about the size of an orange, which indeed formed the tumor detected on examination in the previous autumn. Several ulcerated patches existed on the gastric aspect of this scirrhus mass. No other disease was met with in the chest or abdomen. In the detail of this case I have not thought it necessary to give the daily reports, or to record the variation of treatment adopted; as all that I am anxious to do is to enable the reader to connect the characters of the vomited fluid with the progress of the disease. One point of great interest, which I cannot help alluding to, is the fact of the constant accession of vomiting whenever the patient attempted to recline on the right side. This circumstance, which I have now repeatedly observed in pyloric disease, is in all probability owing to the irritation produced by the gravitation of the fluid or food in the viscus against its diseased and necessarily morbidly irritable portions.

*Physical and chemical characters of the vomited fluids.*—During the whole course of this case, and in every variation of symptoms, the vomited fluid always presented the same general characters, being of a pale yellowish brown, never viscid or *filante* when freed from the mucus accompanying it, in which it differed essentially from the fluid of gastrorrhœa. It was invariably acid, often considerably so, and not unfrequently possessed a sourish odour, not unlike that of sour milk. Diffused through this fluid were almost constantly found a large quantity of minute yellowish granules of fat: these were

lenticular in form, and appeared quite independent of fatty matters taken into the stomach; indeed, so constantly were these present in all the cases I have examined, that I feel inclined to rank them among the peculiar secretions of this disease.

On freeing the vomited fluid from these sebaceous and mucous admixtures, by straining through a cloth, it very readily passed through filtering paper, and was then quite pellucid. It was remarkable how very rarely any debris of ingesta was met with in the fluid, even when vomited during, or antecedent to, the act of digestion: this fact tends to shew the probability of the opinion I have adopted of the gastric origin of many fluids which have been supposed to owe their origin to other sources, in consequence of the absence of ingesta\*. It is a curious circumstance that the fluids vomited in scirrhus pylorus are little liable to putrescence. I have repeatedly kept considerable portions in partially closed vessels for many weeks during the heat of summer, without their undergoing any change, save the separation into three layers, of which the lowest and densest consisted of mucous flocculi, and the lightest of sebaceous particles.

The table opposite gives at one view the chemical characters of the fluids vomited at six different periods in the case under consideration.

On looking at the results given in this table, we cannot help being struck by their general uniformity; no considerable difference existing between specimens of fluid vomited at different periods of the disease, and under different circumstances, whether voided spontaneously or under the stimulus of an emetic. In four specimens out of the six, ammonia was tolerably copiously evolved by the application of warmth after the addition of liquor potassæ; and this change was invariably accompanied by the deposition of brownish flocculi. All let fall a copious albuminous deposit on the application of a current of chlorine, as in other animal fluids poured out by mucous surfaces. The precipitate by nitrate of silver, which was always very copious and curd-like, dissolved readily in ammonia, and consisted nearly entirely of chloride of silver. The conversion of the blue

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\* Page 802 last volume.

When vomited.	Oct. 28.	Nov. 12.	Nov. 17.	Nov. 23.	Nov. 24.	Dec. 10.
Spontaneously or by emetic.	Spontaneous.	Spontaneous.	By emetic.	Spontaneous.	By emetic.	Spontaneous.
Ebullition.	No change.	No change.	No change.	Troubling.	Doubtful troubling.	No change.
Chlorine.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.
Nitric acid.	No change.	No change.	No change.	No change.	No change.	No change.
Sol. potass.	Slight opacity.	Precipitate by heat.	Evolution of ammonia.	Evolution of ammonia.	Evolution of ammonia.	Evolution of ammonia.
Sol. alum.	No change.	No change.	No change.	No change.	No change.	Opacity.
Sol. chlor. tin.	Dense deposit.	Troubling.	Troubling.	Troubling.	Precipitate.	Precipitate.
Sol. chlor. iron.	Brownish tint.	Reddish tint.	Yellow hue.	Deep yellow.	Yellow tint.	Yellow hue.
Sol. chlor. mercury.	White precipitate.	Troubling.	Slight troubling.	Copious deposit.	Copious deposit.	No change.
Nitrate lead.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.	Copious deposit.	Dense deposit.
Nit. silver.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.	Copious deposit.	Dense deposit.
Sulph. copper.	Bright green colour.	Bright green colour.	Bright green colour.	Vividly green.	Turned green.	Green.
Tinct. galls.	Dense deposit.	Dense deposit.	Dense deposit.	Dense deposit.	Dense precipitate.	Dense troubling.
Litmus.	Very acid.	Very acid.	Very acid.	Very acid.	Acid.	Acid.
Sp. gravity.	1.0132.	1.0194.	1.0192.	1.0201.	1.0182.	1.0155.

colour of a solution of sulphate of copper into green, on the addition of it to the fluid under consideration, is well marked, and depends upon its partial conversion into chloride of copper.

*Nature of the free acid present in the vomited fluids.*—We are unquestionably indebted to Dr. Prout for the positive demonstration of the hydrochloric acid in a free state in the gastric juice, and in certain specimens of fluid vomited in cases of irritative dyspepsia. This discovery, corroborated by the almost contemporary experiments of Professor Leopold Gmelin, and subsequently by the researches of many other chemists, have so fully demonstrated the accuracy of the observations of Dr. Prout, that no doubt can remain on the subject. It is true that objections have been adduced to the views adopted by this talented philosopher, chiefly on the ground that the hydrochloric acid supposed to have existed in a free and uncombined state, really was generated during the process of evaporation. This objection is, I am convinced from a careful review of the whole subject, totally untenable. It is supported at best by very forced analogy, and could only be entertained

for a moment by those who content themselves with taking a very partial view of the matter. I feel it is unnecessary to allude further to these hypotheses, than by remarking, that because a solution of chloride of sodium, when mixed with one of oxalic acid, and evaporated, evolves traces of free hydrochloric acid, it does not follow that the same thing would occur when the organic contents of the stomach are substituted for the oxalic acid. In no one case have I ever succeeded in obtaining indications of the evolution of hydrochloric acid when a solution of chloride of sodium is mixed with starch, mucus, and albumen, and submitted to distillation at a moderate temperature—as in a salt-water bath.

#### A. Examination of the fluid vomited on October 28th.

This fluid was deep-brown: it contained in suspension some mucous floculi, and was mixed with a small quantity of debris of food: it passed but slowly through paper, and then possessed the colour of pale ale.

1. Three fluid ounces of the filtered fluid were submitted to distillation in a vapour-bath, until two ounces had



passed over: the residue in the retort was evaporated carefully to as near dryness as the temperature employed would permit. A rich sepia brown, and very acid extract, weighing 67·5 grains, was obtained.

2. The extract thus obtained yielded to boiling alcohol of 0·845, nearly 19·4 grains, leaving the remainder in the form of a coagulated mass, which, however, dissolved in boiling water. The alcoholic solution yielded an acid extract, which was very fusible, evolved a strongly saccharine odour, and was capable of being readily drawn into threads.

3. The distilled fluid (1) was colourless, and possessed an odour of sour milk: it reddened litmus, but did not precipitate a solution of nitrate of silver. By repose, a minute fat-like pellicle formed on its surface. The two ounces of distilled fluid required eight drops of liquor potassæ for complete saturation.

4. An ounce of the distilled fluid (1) having been saturated by liquor potassæ, was carefully evaporated over a vapour bath to dryness. The residual mass was alkaline, and presented a greasy amorphous aspect. On the addition of a drop of strong sulphuric acid, a pungent odour, resembling that of acetic acid mixed with that of rancid butter, was evolved; violent effervescence accompanying this change. On the approximation of a rod dipped in hydrochloric acid, copious white fumes were given off.

5. Three fluid ounces of the filtered vomited fluid required exactly a drachm of liquor potassæ for its complete saturation.

6. A fluid ounce of the filtered vomited fluid was evaporated to dryness, the extract incinerated, and the ash boiled in dilute nitric acid. The filtered solution was mixed with one of nitrate of silver, and three grains of dry chloride of silver were obtained.

7. A fluid ounce of the fluid, neutralized by twenty minims of liquor potassæ, (5) was evaporated to dryness, ignited, and the ash similarly treated. The chloride of silver obtained weighed 5·1 grains.

The liquor potassæ used in this experiment was very pure. To determine the quantity of real alkali present, I supersaturated a fluid drachm with hydrochloric acid, evaporated the fluid

to dryness, and ignited the chloride of potassium thus obtained. It weighed exactly 5·4 grains: hence a fluid drachm of the solution of potass contained 3·416 grains of potassa.

From the above experiments we learn that the ash obtained from an ounce of the vomited fluid contained sufficient chlorine to yield three grains of chloride of silver. Here its hydrochloric acid existed uncombined, or combined only with a volatile base; in the fluid, it would be volatilized during the process of incineration; consequently the three grains of chloride of silver will point out the quantity of chlorine existing in the fluid combined with a fixed base. When previously neutralized with potass, the ash obtained yielded 5·1 grains of chloride of silver: this quantity will of course indicate the proportion of chlorine existing in the fluid in the form of hydrochloric acid, plus the quantity combined with a fixed base. Then, as 5·1 grains chloride silver are equal to 1·294 hydrochloric acid, and as 3 grains chloride silver are equal to 0·7614 hydrochloric acid, it follows that the quantity of free hydrochloric acid in an ounce of the fluid amounted to 0·5326 grains. Consequently, in every pint (3xx.) of vomited fluid there existed 15·228 of combined and of 10·652 grains of free hydrochloric acid. As the hydrochloric acid of the pharmacopœia, of specific gravity 1·16, contains 32·32 per cent. of real acid, it follows that every pint of the fluid vomited by this patient on October 28th, contained a quantity of hydrochloric acid equal to 32·9 grains of the pharmaceutical acid.

But in addition to the hydrochloric acid, there existed a volatile acid, consisting probably of a mixture of acetic and butyric (4) sufficient, in the fluid distilled from three ounces, to neutralize eight drops of liquor potassæ: consequently 3xx. of the vomited fluid contained, in addition to 10·652 of real hydrochloric acid, sufficient organic volatile acids to neutralize forty-three minims of liquor potassæ.

In this specimen of fluid, no ammonia was evolved on the addition of liquor potassæ; consequently no source of fallacy was present in the determination of the quantity of the hydrochloric acid by the presence of an ammoniacal hydrochlorate.

**B. Examination of the fluid vomited November 12.**

In its physical characters this fluid closely resembled that vomited on Oct. 28th. It was strained through flannel, and then filtered through paper.

1. One fluid ounce was distilled until five fluid drachms came away, the heat employed being that of a vapour-bath. The distilled fluid had a strong odour of sour whey, and its surface was covered with a thicker, glistening, fat-like pellicle, than in the former specimen. The extract left in the retort was much more acid than the original fluid, vividly turning crimson the deepest purple litmus paper.

2. The distilled fluid readily reddened litmus paper, but did not, in the faintest manner, affect the transparency of a solution of nitrate of silver.

3. Four fluid drachms of the vomited fluid were evaporated to dryness, and the extract carefully incinerated. The ash, dissolved in dilute nitric acid, yielded a precipitate of chloride of silver, weighing 1·8 grains on the addition of a solution of the nitrate.

4. Four fluid drachms of the fluid being carefully neutralized, and treated as in the last specimen (A. 7), yielded 2·5 grains of chloride of silver.

5. An ounce of the vomited fluid required fourteen minims of liquor potassæ for perfect saturation.

6. The addition of liquor potassæ, and the application of heat, did not cause the evolution of an appreciable ammoniacal vapour from the vomited fluid.

From these experiments it follows, that each ounce of this vomited fluid contained ·3554 grains of free hydrochloric acid, as calculated from the quantity of chloride of silver obtained from the ash of the neutralized fluid, minus that obtained from the ash of the un-neutralized fluid (3, 4). Hence, in each pint (3xx.) of the vomited fluid there existed 7·108 grains of real acid, equal to 22 grains of the hydrochloric acid of the Pharmacopœia.

The quantity of volatile acid can be calculated tolerably accurately from the quantity of liquor potassæ required to saturate the vomited fluid. Thus, 3xx. required 280 minims of liquor potassa for saturation (5), equal to 15·918 of potass; a quantity sufficient for the saturation of 11·72 grains of hydrochloric acid, or 4·612 grains more than

was really present. As 7·108 grains of acid require, for saturation, but 9·2 grains of potass, or 162 minims of the solution, it follows that as much of some acid destructible by heat as would neutralize 108 minims of liquor potassæ, or 6·7 grains of real alkali, must have co-existed with the hydrochloric acid.

**C. Fluid vomited November 17.**

In its physical characters it much resembled the two preceding specimens, being merely somewhat paler.

1. Submitted to distillation, it yielded an acid fluid precisely resembling that obtained from the other specimens. The extract left was very acid.

2. An ounce of the fluid required sixteen minims of the liquor potassæ for perfect saturation.

3. An ounce evaporated and incinerated, contained sufficient chlorine to yield 4·4 grains of chloride of silver.

4. An ounce previously saturated by potass, yielded, when treated as the other specimens (A B.), 4·6 grains of chloride of silver.

Then, as 4·4 grains of chloride of silver are equal to 1·116 hydrochloric acid, and 4·6 grains to 1·166, it follows that in each pint (3xx.) of the vomited fluid there existed—

Free and combined hydrochloric acid	23·320 gr.
Combined hydrochloric acid only	22·320

Leaving of the free acid only 1· gr.

As one grain of hydrochloric acid requires 1·3 grains of pure potass for saturation, and as the quantity of acid present in 3xx. of the vomited fluid was sufficient to neutralize nearly 3vss. of liquor potassæ, equal to about 18·2 of the pure alkali, it follows that a quantity of some acid, destructible by heat, sufficient to saturate 16·9 grains of pure potass, was present in the fluid.

In the determination of the quantity of free hydrochloric acid in this specimen, a source of fallacy exists in the presence of ammonia. For as the addition of liquor potassæ determined the evolution of the alkali, it is just probable that it existed combined with hydrochloric acid; and hence that part of the acid regarded as free (1 grain) may, in reality, have existed in the state of an ammoniacal salt.

[To be continued.]

## ON ALBUMINURIA.

*To the Editor of the Medical Gazette.*

SIR,

SHOULD you consider the following experiments and observations on albuminuria worthy of a place in your valuable journal, you will oblige me by inserting them at your earliest convenience.—I am, sir,

Your obedient servant,  
GEORGE ROBINSON, M.R.C.S.

Newcastle-on-Tyne, May 21, 1842.

In a memoir on the Pathology of Granular Disease of the Kidney, which I published at the commencement of the present year, I endeavoured to prove "that the acute stage of writers is simply acute nephritis, and that all the varieties of morbid appearances occurring in the chronic stage may be considered as resulting from so many different degrees in intensity and duration of chronic inflammation of the kidney."

Among other facts, I related in support of that view an experiment in which, by tying the renal vein of a rabbit, I produced a condition of the kidney precisely similar to that met with in acute nephritis. Since then, I understand that Dr. Stokes, in the Dublin Medical Journal for the month of March, has given the particulars of three cases which tend very much to increase the value of that experiment, and to corroborate the conclusions I drew from it. I regret that I have not at present access to that journal, but I believe that in two of those cases the renal veins were found inflamed; in the third this was not so apparent, but in all the coats were thickened so as to cause obstruction to the flow of blood, and in all albuminous urine had been secreted during life.

In connexion with that view of the pathology of the disease, I attempted to establish the following rule for the explanation of albuminuria:—"That the presence of albumen in the urine is produced by, and its proportional quantity is in a direct ratio to the degree of, congestion of the capillaries of the kidney, from whatsoever cause that congestion may arise."

In the above-mentioned experiment, the urine was not examined till fifteen

hours after the ligature of the vein, when it was found bloody. It therefore still remained for me to prove the truth of the rule by direct experiment, and this I have been enabled to do satisfactorily during a short stay in this town, where I have availed myself of the kind assistance of my friend, Mr. Fenwick, to whom I was indebted for much valuable advice in arranging my original views on the subject.

I subjoin the particulars of a few experiments, which I deemed it unnecessary to multiply further, as in them the proportion of albumen in the urine gradually increased, from the production of very minute flakes on the application of nitric acid and heat to the effusion of spontaneously coagulating albumen.

Exp. 1.—A young rabbit, not above six weeks old, the left kidney exposed, and its vein tied: the animal was killed ten minutes afterwards. The bladder was found distended with urine, which must have been chiefly secreted before the ligature was applied; tested with heat and nitric acid, permanent flakes were evident in the liquid.

Exp. 2.—A similar operation was performed on a rabbit of the same age and size, which was killed at the end of half an hour. A very small quantity of urine in the bladder; the same tests being applied, the flakiness was much more distinct than in the last experiment.

Exp. 3.—A larger rabbit used: the left kidney exposed and drawn out through the external incision, so that its vein was compressed for nearly ten minutes by the action of the surrounding muscles: the organ speedily and visibly enlarged, and presented the lividity of congestion. The vein was then separated from the artery, but in attempting to pass a thread under it the coats were slightly torn, and the blood immediately escaped from the distended vessels of the kidney, which at once fell to its natural size, and assumed its original colour. Compression was applied to the vein till the hæmorrhage ceased from the formation of a coagulum; the organ was then returned within the parietes of the abdomen, and the wound closed. At the end of half an hour the animal was killed, and about 3ij. of urine taken from the bladder: it was of the ordinary

colour of rabbit's urine, and contained the usual sediment. On allowing the latter to subside, and adding a few drops of nitric acid, there was immediate coagulation of the more liquid portion, whilst the sediment dissolved with effervescence: heat alone also coagulated the clearer part of the fluid; and this effect was still more manifest on the addition of a drop or two of nitric acid.

**Exp. 4.**—The renal vein of a similar rabbit tied tightly, so as completely to obstruct the return of blood from the kidney, which was then returned; and at the end of ten minutes the animal was killed. About a drachm of urine in the bladder, of a natural colour and appearance; and on adding to it a few drops of nitric acid immediate and decided coagulation took place, which was still further increased on applying a gentle heat. The kidney operated on was beautifully congested, the granular appearance of its surface being unusually distinct.

**Exp. 5.**—A strong full-grown buck rabbit. The renal vein exposed; but in clearing it from the fat previous to passing the thread round it, the coats were slightly lacerated, so that a little blood continued to ooze out by the side of the ligature. It was killed exactly an hour after the operation. A little urine escaped through the urethra, but on opening the bladder it was coagulated more firmly on exposure to the air. It was beautifully clear and pellucid, and could be compared to nothing so well as to a portion of the vitreous humour of the eye; in fact, presenting a perfect specimen of spontaneously coagulating albumen or lymph. It weighed rather more than a scruple.

**Exp. 6.**—A strong rabbit. The renal vein tied very loosely, and the ureter on the same side also ligatured. Killed eighteen hours afterwards. The kidney operated on gorged with blood: the urine found in the ureter above the ligature consisted chiefly of blood; that in the bladder was not albuminous.

In all these experiments the kidneys operated on were more or less congested; their colour darker, and their bulk and weight greater, than the remaining organs, which were, in every instance, perfectly healthy in colour, size, and structure.

It is evident that the degree of congestion of the vessels of the kidney

must depend upon, and vary with, the completeness of the obstruction to the return of venous blood on the one hand, and the intensity of the impulse given to the current of arterial blood, by the heart's action, on the other. Whenever the obstruction to the return of blood is incomplete, and the heart's action weak, then a low degree of congestion will occur; whilst, under opposite conditions, the effects of a more intense congestion will be found. The composition of the blood at the time, and more particularly its comparative richness in albumen, will also modify the nature of the effusion.

Bearing these principles in mind, it may be well briefly to notice each experiment in detail, for the purpose of explaining one or two apparent irregularities, which at first sight seem to affect the value of the rule.

In the first case the albumen, as it first entered the bladder, was diluted by the fluid already collected there; and this accounts for the small proportion found in the urine: but of course such a source of fallacy is not likely to occur in the human subject, and might be readily guarded against by frequently repeated examination of the urine. The rabbits used in the two first experiments were small and young, and not in good condition; and these circumstances taken together enable us to understand why the proportion of albumen in their urine was smaller than when a similar operation was practised for the same length of time on older and stronger animals. The loss of blood, by the wound in the renal vein, so far reduced the power of the heart's contraction in the third rabbit, that the proportion of albumen in the urine was not greater than in the fourth, although the latter lived about ten minutes after the ligature was applied, and the obstruction was continued in the former for more than half an hour; but here again the quantity of urine examined was much greater in one case than in the other.

In the fifth experiment every thing was favourable to the effusion of a highly albuminous fluid: the animal was strong and fat, its blood probably rich in albuminous matter, and by the accidental laceration of the coats of the vein, and the subsequent escape of blood by the side of the ligature, the congestion was maintained at the proper



degree for the exudation of the liquor sanguinis: whereas, if the obstruction had been in this case more complete, the probability is that the distension of the vessels would have been so extreme as to cause their rupture at some points, and the consequent extravasation of blood into the tissue of the gland, and also into the receptacle for the secretion, as happened in the sixth experiment. In this latter the only thing worthy of observation is, that the animal was alive at the end of eighteen hours; whilst in two former cases death took place within fifteen hours after the operation. The explanation of this difference in the results obtained appears to be that, in the present instance, a stronger and larger rabbit was employed, and that the ligature was more loosely tied than before.

I did not consider it necessary to repeat any more experiments on this head, as my present object is merely to prove the truth of the rule I laid down for the explanation of the presence of albumen in the urine, and to justify its practical explanation in determining at any time the intensity of the renal congestion, by ascertaining the chemical composition of the urine; so far at least as the presence and proportion of albumen are concerned. These experiments, taken in conjunction with the facts and arguments which I have elsewhere adduced, and supported as they are by the cases of Dr. Stokes, to which I have referred, seem to me to leave no room for doubting the correctness of that rule; and the ready and satisfactory explanation it affords of the *modus operandi* of the numerous and opposite causes to which albuminous urine has been traced by different observers, must tend to simplify the diagnosis of renal disease in general; at the same time that it presents a new method of ascertaining the condition of the circulation in the large venous trunks of the abdomen.

Before concluding, I must avail myself of this, the first opportunity I have since had, of expressing my thanks and acknowledgments to Dr. Bright for the kind and handsome manner in which, though personally unacquainted with me, he lent the weight of his name in support of views which might not otherwise have attracted much attention.

## ON ATMOSPHERIC PRESSURE UPON THE BRAIN.

*To the Editor of the Medical Gazette.*

SIR,

IN my communication to your journal of 6th May, I flattered myself that the fact of atmospheric pressure upon the brain was clearly established to the satisfaction of every body; but Mr. Bell's letter of 20th May convinces me to the contrary. Your correspondent so entirely misunderstands me, that I was ready to accuse myself of obscurity and confusion, and I submitted my paper to the perusal of a friend, not unknown to the scientific world, Mr. H. H. Watson, of this town. I was glad to find that he had no difficulty either in understanding it, or in admitting the principles it contained.

Let it be understood, that the question of atmospheric pressure upon the brain is a purely physical one; there is no vital law which can suspend or counteract this pressure; the consideration of it therefore must be kept quite distinct from the subject of circulation in the brain; but Mr. Bell has throughout mixed the two questions together. In the paper which Mr. B. endeavours to refute, the word *circulation* does not once occur; it is true it is headed "Circulation in the Brain," but that is not my doing, and is of no consequence. The meaning of a thing must not be looked for in the title, but in the substance. In considering the subject of the pressure of the atmosphere upon the brain, we may regard the vessels of the brain simply as tubes full of a fluid; it is quite immaterial whether that fluid is at rest or in motion.

I stated, that the head and its contents were in the position of an inverted long-necked globular vessel filled with water and any thing of the consistence of brain, clearly meaning *quoad* atmospheric pressure; Mr. Bell distinguishes this comparison with two notes of admiration. He then, unintentionally, no doubt, misrepresents me, by triumphantly inquiring, "what analogy can possibly exist between the circulation of the blood in the brain and a globular vessel filled with water turned upside down?" I leave those to answer the question who made the



comparison: I never made it. Mr. B. then expresses his astonishment that I should be so ignorant of the rules of reasoning as to pass off an illustration for an argument. Let it be taken as a mere illustration; it does ample duty as such, and throws light upon the reasoning in the previous paragraph in the paper under review. But it is more than a mere illustration, it is an example, and therefore an argument; it not only throws light, but also confirms. As far as atmospheric pressure is concerned, the abused inverted long-necked globular vessel, filled with water, is exactly in the same circumstance as the head with its vessels entering the cranium at the base of the skull; and what, in respect to this pressure, applies in one case, will apply in the other. We have, in the one case, the dome of the skull completely closed, there being no communication through it to the interior of the cranium, but at the base there are several vessels entering it containing a fluid. In the other case, we have the upper part of the globular vessel in the same circumstance as the upper part of the skull, and at the lower part we have a tube representing the veins and arteries, the vessel being filled with water, which it will retain, though inverted, if the experiment be performed with care. Now if the atmosphere presses upon the contents of this vessel through its neck, of which there is no doubt, so must it press upon the contents of the head through the medium of the blood-vessels. Mr. Bell says that if the vessels entered the skull at one point only, and if their *external* surface were subject to atmospheric pressure, my comparison might have some slight shade of plausibility. It is of no consequence to the comparison where the vessels enter, provided it be at the base of the skull: if the atmosphere acts upon one, it will act upon all, in the direction towards those parts of the inner surface of the cranium which are closed; and with regard to the supposed necessity that the atmospheric pressure should act upon the *external* surface of vessels, in order to produce any effect, it surprises me that there should be occasion to remind Mr. Bell that the atmosphere will press upon vessels whatever thickness of *soft* parts intervenes.

Supposing the comparison to be cor-

rect, Mr. Bell objects that too much would be proved; for in that case not a drop of blood could escape from the cranium, unless atmospheric pressure be admitted in an opposite direction. If Mr. Bell means that the quantity of blood in the brain could not be diminished, I agree with him; but if he means that no blood could return from the cranium by the veins, he is in error; for there is nothing to prevent as much blood escaping by the veins as enters by the arteries.

Complying with Mr. Bell's suggestion, I referred to Dr. Watson's valuable lectures, vol. xxvii. p. 741, of the *MEDICAL GAZETTE*. There I found a comparison *essentially* resembling the above, and in every respect similar to that drawn from the mode of sucking eggs. The Professor compares the head and its contents to a barrel of beer, of course, *quoad* atmospheric pressure. To quote from him. When Dr. Kellie trepanned a sheep, I found the brain as completely drained of red blood as any other part of the body; "he did that with respect to the blood contained in the brain which housekeepers do when they tap a barrel of beer. You know that if the barrel is quite full, you may introduce a faucet at its lower part, but no beer will run through it. The pressure of the atmosphere operates upon that portion only of the fluid which is now exposed to the air, and its effect is to keep the beer in. But if you bore a small hole with a gimlet through the top of the cask, and so admit air into the barrel, the beer will then flow readily through the lower outlet. Dr. Kellie imitated this process of making a vent-hole, when he trepanned the skull of the sheep, and admitted air to the yielding membranes of the brain." Dr. Watson certainly says in the same lecture that "the brain is exempt from atmospheric pressure;" but I presume this is from mere inadvertence, for his own comparison points out the contrary, and shows that it is owing to this very pressure that fluid can be drawn neither from the barrel nor from the head, unless Dr. Kellie's expedient be had recourse to, viz. making a vent-hole. The atmosphere as much presses upon the blood entering the skull, through the medium of the intervening soft parts, as it presses upon the fluid in the faucet of the barrel. Mr. Bell fa-

vours my comparison of the inverted vessels with two notes of admiration: as beer is more admirable than simple water, how many more would he bestow on Dr. Watson's? If it be true, as Mr. B. asserts, that I compare the circulation in the brain to an inverted vessel filled with water, or to an egg with an opening at one end only, it is equally true that Dr. Watson compares it to a beer-barrel. Perhaps your correspondent considers this latter comparison far more apt than the others, inasmuch as headaches are said to reside in barrels and hogsheads, and beer is sometimes heady.

I cannot understand the second paragraph of Mr. Bell's letter. He misrepresents me as saying that the pressure of the atmosphere operates from the centre of the brain towards its circumference; whereas the word "centre" does not occur in my paper. What I do say is this: "that the brain is so circumstanced that the direction of the pressure is from the outlets of the skull, giving passage to blood-vessels and nerves towards every part of the surface of the brain in contact with the dura-mater." In what direction does the air act upon the fluid in the faucit of a beer-barrel without a vent-hole, if not from the outlet, through the mass of beer, towards the inner surface of the barrel? In considering this question it is unnecessary to make any distinction between the veins and arteries which pass through the outlets of the skull, and I do not see on what ground Mr. B. makes the distinction.

The absurdity of atmospheric pressure upon the brain is proved, Mr. B. says, from the fact, that in the brains of executed criminals and strangled dogs there is not the slightest trace of congestion, while vessels on the outside are immoderately distended and even ruptured. I really do not see what strangulation has to do with the pressure of the atmosphere, either to increase or diminish it.

I am at a loss to know how Mr. Bell accounts for the fact, that blood will not flow from the interior of the cranium, so as to diminish the quantity of that fluid, when blood-letting is employed. Is it owing to the antique hatred that nature bears a vacuum, or is it that the blood is headstrong, and won't come out? Will not Mr. Bell confess that the inverted long-necked

vessel filled with water, the barrel of beer without a vent-hole, the egg with an opening at one end only, and the head with its vessels, are all in the same position, *quoad* atmospheric pressure?

Though not directly, yet by implication, Dr. Abercrombie assents to the fact that the brain undergoes the pressure of the air, as appears from a passage, page 302, 2d edition, of his work on Diseases of the Brain, where he says that the "brain is clearly shut up from atmospheric pressure, and free from all influence from without, except what is communicated through the blood-vessels which enter it." The above excellent authority, like Dr. Watson, inadvertently asserts that the brain is exempt from the pressure of the air, but afterwards admits it, when he says, "influence from without is communicated through blood-vessels which enter the brain."

At the risk of being charged with presumption, I venture to suggest to Mr. Bell the propriety of carefully studying the subjects of pneumatics and hydraulics; by so doing he will be convinced that no shut up cavity, which communicates with the exterior by any fluid or yielding substance, is exempt from the pressure of the air.

When I sent my first communication, which appeared in the MEDICAL GAZETTE of the 25th of February, on the "Effects of Shocks upon the Head," I had no suspicion that I was commencing a controversy involving the first and well-understood principles of natural philosophy; and I cannot but think it has been a loss of time and time to have entered so minutely into them. The necessity for so doing is to be regretted. One would almost think that Otto Von Guericke, and the illustrious Boyle, had lived in vain.

Mr. Bell has announced that, so far as he is concerned, the discussion is at an end. I am glad of it; for no doubt it has been wearisome not only to him and me, but to those who have accompanied us, if there be any. In accordance with a good old English custom, I shake hands with my antagonist, and take a friendly leave of him.

I am, sir,  
Your obedient servant,  
T. HAWORTH, M.D.

Bolton, May 28, 1842.

## MEDICAL GAZETTE.

*Friday, June 3, 1842.*

"Licet omnibus, licet etiam mihi, dignitatem  
*Artis Medicæ* tueri; potestas modo veniendi in  
 publicum sit, dicendi periculum non recuso."

CICERO

EMPLOYMENT OF CHILDREN IN  
MINES.

"ONE half of the world," says Miss Edgeworth, "does not know how the other half lives:" a dictum confirmed by daily experience. If examples were wanting, we might cite the evidence furnished by a report just published\*. It appears that in 1840 a commission was appointed, in pursuance of an address from the House of Commons, to inquire into the condition of the children employed in mines, and various trades not included in the provisions of the Factory Act. The Commissioners thought themselves bound to construe the term children in the sense assigned to it in the act just mentioned, where it is limited to those under thirteen years of age; but in compliance with another address of the House, their powers were enlarged, and the inquiry was extended to young persons, *i. e.* those between the ages of thirteen and eighteen. The Commissioners were Dr. Southwood Smith, Messrs. T. Tooke, Leonard Horner, and R. J. Saunders, assisted by a number of sub-commissioners. The facts brought out in this portion of their inquiries are singular indeed. Had it been possible to anticipate the existence of the scenes described anywhere, we might have imagined them among the convicts of Australia, or the apprentices to the Dutch boors at the Cape of Good Hope; not in this country, which has so many

just claims to be considered the very leader of civilization. But there are spots in the sun.

The first point considered in the Report is the age at which children are first employed in coal mines. The most usual age appears to be eight or nine, but they often begin much younger, and sometimes at four or five. The custom in this respect varies in different parts of the kingdom. Thus in the pottery district of North Staffordshire, the employment of children in the potteries prevents their being taken into the coal mines under thirteen years of age; while in the Coalbrook Dale district in Shropshire, some children begin to work in the pits at six. Nay, Dr. Mitchell, one of the sub-commissioners, found an instance where a child a little more than four was regularly taken into the pit by his father.

In the collieries of the East of Scotland this early commencement of work is still more common than in any part of England. The manager of the Fordel Colliery, the property of Admiral Sir P. Durham, Bart. of Fordel, says: "We have 82 young persons and children working below ground. The females begin to assist to draw by the chain from six years of age, and many from six to twelve years of age are employed." These children, too, are often employed in hard, oppressive work: thus Margaret Leveston, a coal-bearer, six years old, says—"Been down at coal-carrying six weeks; makes 10 to 14 rakes a day; carries full 56 lbs. of coal in a wooden bucket. The work is na guid; it is so very sair."

In South Wales and Monmouthshire matters are still worse, as it is no very unusual thing in this district for children to be taken into the pits as early as four years of age. A witness who is under-agent to Gellgan collieries, says: "Children are taken down as soon as they can crawl."

\* Children's Employment Commission. First Report of the Commissioners. Mines. Presented to both Houses of Parliament by command of Her Majesty. 1842.

But it is the next point discussed, entitled "Sex: Employment of Girls and Women in coal mines," which is the darkest chapter in the Report. If the promiscuous assemblage of girls and boys in the factory and the workshop has always been unfavourable to morals; if, even there, modesty is soon exchanged for boldness, and effrontery deepens into vice; what can we expect from mines like those of Yorkshire, where men and girls work together, the former quite undressed, the latter nearly so, but the orgies of a brothel?

Mr. George Armitage says, "I hardly know how to reprobate the practice sufficiently, of girls working in pits; nothing can be worse. I have no doubt that debauchery is carried on, for which there is every opportunity; for the girls go constantly, when hurrying, to the men, who work often alone in the bank-faces apart from every one. I think it scarcely possible for girls to remain modest who are in pits, regularly mixing with such company, and hearing such language as they do." Joseph Ellison, of Birkinshaw, near Birstall, says: "I know a case of a girl being employed as a hurrier, having been attempted to be ravished frequently by her father-in-law, till at length she could not be got down into the pit. Where girls are employed, the immoralities practised are scandalous."

"I consider it a scandal," says another witness, a woman, "for girls to work in the pits. I am credibly informed that in some pits scenes pass which are as bad as any house of ill-fame: this I have heard from young men who work in the pit."

But perhaps the best proof of the badness of the system is to be found in the following resolution, passed at a meeting of colliers held before the sub-commissioner at Barnsley, in Yorkshire:—"That the employment of girls in pits is highly injurious to their

morals, that it is not proper for females and that it is a scandalous practice." Among more than 350 working colliers present, there were only five dissentient voices. This is very strong evidence indeed; for the probability that some were influenced in their votes by the presence of the sub-commissioner is far outweighed by the apprehension which they must have felt of immediate loss through a change in the system.

Independently of this depravity, the toilsome life of these women is morally degrading. Out-of-door work, in general, has an unfavourable influence on the feelings as well as the constitution of women. The withered features of the female day-labourers on the Continent indicate how little their employment is suited to their sex; and the domestic charities can scarcely flourish when she who should foster them is withdrawn from the home where they should spring up.

In the West Riding of Yorkshire this wretched system is at its height. According to one of the sub-commissioners,

"Girls regularly perform all the various offices of trapping, hurrying, filling, riddling, tipping, and occasionally getting, just as they are performed by boys. One of the most disgusting sights I have ever seen was that of young females, dressed like boys in trousers, crawling on all fours, with belts round their waists, and chains passing between their legs, at day pits at Hunshelf Bank, and in many small pits near Holmfrith and New Mills: it exists, also, in several other places."

In other districts, as in Lancashire and Cheshire, the same practice prevails. Thus Betty Harris, aged 37, drawer in a coal-pit at Little Bolton, says:—

"I have a belt round my waist, and a chain passing between my legs, and I go on my hands and feet. The road is very steep, and we have to hold by a

rope, and when there is no rope, by any thing we can catch hold of. There are six women and about six boys and girls in the pit I work in: it is very hard work for a woman. The pit is very wet where I work, and the water comes over our clog-tops always, and I have seen it up to my thighs; it rains in at the roof terribly; my clothes are wet through almost all day long. I never was ill in my life, but when I was lying-in. My cousin looks after my children in the day-time. I am very tired when I get home at night; I fall asleep sometimes before I get washed. I am not so strong as I was, and cannot stand my work so well as I used to do. I have drawn till I have had the skin off me; the belt and chain is worse when we are in the family-way. My feller [husband] has beaten me many a time for not being ready. I were not used to it at first, and he had little patience; I have known many a man beat his drawer."

A similar practice prevails in the East of Scotland. The women have to crawl backwards and forwards with small carts in seams often not more than 22 to 28 inches high. The labour lasts from twelve to fourteen hours daily. One girl, aged ten, deposes that she carries loads weighing a cwt.; another, of seventeen, works at night the alternate weeks; she then goes down at 2 P.M., and comes up at 4 or 6 A.M.

Jane Peacock Watson says, "It is only horse-work, and ruins the women; it crushes their haunches, bends their ankles, and makes them old women at forty."

Here, as well as in England, the custom of working till the last moment of pregnancy appears to be a frequent cause of miscarriage.

In many large coal-districts neither women nor girls are employed under ground; for instance, in Staffordshire, Shropshire, Durham, Northumberland, South Gloucestershire, and Ireland. In Cumberland, the practice occurs only in one old colliery belonging to

the Earl of Lonsdale; and in the West of Scotland, though not absolutely unknown, it is extremely rare. In South Staffordshire, many women are employed under the name of bankswomen, not to work in the pits, but above ground, to unload the *ships* as they come up.

It is pleasant to add that a reform has been effected in some places where the old system once prevailed. Thus women and girls have been excluded for some time from the Dalkeith collieries by the express command of the Duke of Buccleugh; and, for the last four years, from those belonging to Mr. Ramsay. According to the managers of his Grace's coal-mines, as well as Mr. Ramsay's, when women are employed as coal-bearers, they are often selected as wives, for their strength, rather than from affection, or for their domestic qualities.

In the Arniston Colliery, women are not allowed to go below at all, and no boys under twelve years of age. These rules have been established there for some time past, and, according to Mr. A. Maxton, the manager, with the best effects. The houses of the workmen are clean and comfortable; the mothers attend to the children, and the young women go out to service.

The colliers, too, are sensible of the benefit thus conferred on them; and although many men and families left, when the order was first issued, many have now returned; for the roads having been improved, and the *output* not limited, they find they can earn as much money, with the addition of a comfortable home.

Such are a few of the points touched on in this Report: to discuss them all would far surpass the limits of a single article.



## BIOGRAPHICAL SKETCH

OF THE LATE

SIR CHARLES BELL, K.H. F.R.S. &amp;c.

THIS eminent surgeon and physiologist, whose recent death has deprived the profession of one of its brightest ornaments, was the youngest son of the Rev. William Bell, a clergyman of the Episcopal Church of Scotland.

He was born in the year 1775, and received his education in the High School of Edinburgh. He was still very young when he began the study of anatomy under the celebrated John Bell, who, twelve years senior to his brother Charles, was already in the highest estimation as a lecturer and a surgeon, and to whom he was apprenticed in 1792.

To the instruction he received under this enthusiastic and highly gifted teacher, may, in great measure, be attributed the success with which Mr. Bell cultivated and improved the sciences of anatomy and physiology; and the ardour with which he at this time pursued his studies, is shewn in the publication of the first volume of his "System of Dissections," when he was yet only in his twenty-second year. This, his earliest work, bears that stamp of originality which characterized every production of his after-life. It presents the germs of numerous important doctrines which he employed himself in developing in his later publications. The engravings contained in it, taken from original drawings by himself, with some etchings by his own hand, prove how accomplished he was as an artist at that time; and were the first indications of a power of using his pencil, which was not only useful for illustrating his lectures and works, but was the source to him in private life of never-failing pleasure.

In the year 1799, Mr. Bell became a Fellow of the Royal College of Surgeons of Edinburgh, and was shortly afterwards appointed Surgeon to the Royal Infirmary. Here he soon acquired reputation as an operator, by his simple and dexterous manner of using the scalpel alone in the operation of lithotomy. A few years afterwards he determined to relinquish his prospects in Edinburgh, and seek success in London. To this step he was led by many circumstances, amongst the principal of which was,

perhaps, the excited state of party feeling at that time existing in Edinburgh, and from the annoyances of which he could scarcely hope to escape, as his brother, whose powers of sarcasm and peculiar aptness for controversial writing made him an object of fear and dislike to his opponents, was at this time leader of one of the parties which divided the profession.

Mr. Bell came to London in 1806, and very soon gained for himself a high reputation as a lecturer on anatomy and surgery. Nothing can more decidedly prove how great were his qualifications for the career on which he had embarked than his success at such a time. Unsupported—dependent on his own exertions alone—he was enabled to enter into competition with Cline, Abernethy, Cooper, and others scarcely less known, and to come off with honour. Himself an ardent lover of his profession, he had a manner, scarcely to be surpassed, of inspiring in others the same admiration, and he could invest with an interest before unfelt the driest details of anatomical demonstration.

It was only to be expected, that, with these powers, combined with an unwearying devotion to his professional pursuits, and to the progress of his pupils, he should have been enabled—associated with Mr. Wilson, and afterwards with Mr. John Shaw, in the school of Great Windmill Street—to raise the character of that school to the highest pitch. His lectures could not fail to interest and instruct even those who were unable to appreciate that boldness of conception and originality of mind which were displayed in them, and which afterwards led to so great results. It was in this school that he first explained his original and beautiful views on the Nervous System—those views which have gained to himself immortality, and reflected honour on his country.

Mr. Bell's fame as a surgeon must at this time have stood very high in London; for, in 1812, he was elected surgeon to the Middlesex Hospital, after the severest contest ever known in that institution. From this time, till he quitted London, he lost no opportunity of giving clinical instruction to the pupils. Many of these lectures were published in this journal: and our readers will not think that we ex-

ceed in our praise, if we represent them as among the best models of that style of teaching to be found in medical literature.

Previous to his election, he had received, after a nominal examination, the diploma of the College of Surgeons of London.

His zeal in the cultivation of professional knowledge had been before, and it was subsequently, instanced by the alacrity with which he availed himself of the opportunities offered for the study of gun-shot wounds by the battle of Corunna, and afterwards by that of Waterloo. After the latter action, he and his brother-in-law, Mr. John Shaw, were the first surgeons from England who arrived at Brussels; and Mr. Bell was unremittingly employed in his attentions to the wounded, in taking cases, and in making those sketches and drawings which have been justly regarded as amongst the finest specimens of water-colour painting. For three successive days and nights was he engaged in operating on and dressing the wounded, and he had no fewer than 300 cases under his own personal care. The results of his observations are appended to his "System of Operative Surgery."

His appointment to the Professorship of Anatomy and Surgery to the College of Surgeons, a few years later, gave him an opportunity of displaying, in the most decisive manner, the depth and clearness of his reasoning powers, the originality of his mind, and his singularly felicitous method of imparting knowledge.

He chose for his subject, among others, one which was always a favourite with him, "The evidence of design in the formation of our frames;" and he was daily listened to with attention and delight by crowds of the most eminent men of the day both in and out of the profession. That his style combined a substantial and effective power of reasoning which satisfied the understanding, with an easy and impressive manner that bound his listeners' attention to him, may be illustrated by a saying imputed to the present venerable Bishop of Durham, then a frequent attendant upon his lectures—"Sir Charles Bell's discourses convey to me the impression not so much of a lecture, as of a man *thinking aloud*."

To the delivery of these lectures we

owe the publication of his two papers on "Animal Mechanics" in the Library for the Diffusion of Useful Knowledge, in which is illustrated, in his most happy manner, the idea, that the type of most of those mechanical contrivances which the labour and ingenuity of man have been so long in perfecting, may be found by the inquirer in the construction and adaptation of parts in the animal economy. The remarkably extensive circulation of these papers proves how favourably they were received by the public.

Following out the same train of thought, he was led, when selected by the trustees of the Earl of Bridgewater to write one of the treatises in fulfilment of the wishes of that nobleman, to choose the subject of the "Hand"; his essay on which is too well known and appreciated to need comment.

He was afterwards associated with Lord Brougham in the publication of the illustrated edition of "Paley's Evidences of Natural Theology"—a beautiful work, to which both his pen and pencil contributed largely.

His reputation as a man of science, in consequence of these publications and his physiological discoveries, rose so high, that on the accession of William IV. he was amongst the number of those who received the honour of knighthood as an acknowledgment of their high scientific merit. In the meantime, he continued with undiminished success to deliver his lectures in Great Windmill Street, until the year 1828, when he was induced, on the formation of the London University, to accept the chairs of Physiology and Surgery in that school; and to him it was allotted to give the first lecture delivered within its walls.

He did not long remain attached to this institution, the dissensions which arose soon after its establishment causing him to relinquish his Professorship. His connection with the Middlesex Hospital, however, continued, until his appointment to the Chair of Surgery in the University of Edinburgh, in 1836, induced him to leave London, and to return to the scene of his early labours and his early success; taking with him the regrets of all who knew him, and the respect and esteem of the whole profession.

The life of Sir Charles Bell was one of incessant and laborious study. This is sufficiently evidenced by his

numerous works. Few, however, except his friends, know how unremitting was his application to his duties as a Teacher—with what care and attention each lecture, though only clinical, was studied, even to his last course.

His earliest publication was his "System of Dissections," in folio. He next took part with his brother in that excellent, and we may say unrivalled work, "The System of Anatomy," which passed through seven editions; and, within a few years after, he had published, at successive times, his Engravings of the Arteries, of the Brain, and of the Nerves.

These were soon followed by his essay on the "Anatomy of Expression," one of the most elegant works in our language, and which is esteemed one of the greatest gifts conferred by anatomy on the arts. A third edition of this work, enriched with observations made by him while on a tour in Italy two years ago, has been left, we understand, ready for the press.

"The System of Operative Surgery" appeared in 1807. The brilliant and undying fame which Sir Charles Bell has acquired as a physiologist has perhaps been prejudicial to his reputation as a surgeon; but for matters appertaining more immediately to surgical practice, the profession are not less his debtors than for his general physiological researches and discoveries. Sir Charles was ever employed in directing his powerful and vigorous mind towards points of daily practice. We have seen, in his desire to improve himself in the study of gun-shot wounds, how regardless he was of labour and personal inconvenience. The same zeal was ever at work in him. But with those powers of generalization which he possessed to so large a degree, his attention was always directed to the elucidation of general principles. Hence his surgical writings do not appear to possess at first view that practical character which is so satisfactory to the mind of the student. The views contained in them are not, however, the less practical; and they have this additional advantage, that all the precepts they contain flow from and are supported by close reasoning, founded on an extensive range of observations. "The System of Operative Surgery" is a work purely practical. Every step of an operation, from the preparation to the final dressing, is described; and

it may not be too much to say that, amidst all the improvements and alterations which have taken place in practice since its publication, there is no work more calculated to be of real service in this department of surgery.

Sir Charles was in every way eminently gifted as an operating surgeon. His extensive knowledge of anatomy, the instructions he received under his celebrated brother, who ranked so high as a practical surgeon, the remarkable accordance of his eye and hand, his entire self-confidence, all combined to render him one of the first operators of his day. But it is perhaps more to his praise, that he never allowed himself for a moment to forget the safety or welfare of his patient in the desire to make a display; and he was backward, even to a fault, in risking an operation. The results of his experience, clothed in his own simple but forcible language, are contained in his "System," and will never fail to be a sure guide to the surgeon.

His after surgical publications were his letters on the Diseases of the Urethra, published in 1809, of which a new edition in an enlarged and improved form was brought out by Mr. John Shaw in 1820: the Engravings from specimens of Morbid Parts contained in the Windmill Street Museum, in 1813; and his Surgical Observations; the first number of which appeared in 1816, and the last in 1818. Then followed the Illustrations of the Great Operations of Surgery in 1821, and the Observations on Injuries of the Spine and Thigh-bone in 1824. Soon after this he published an octavo edition of John Bell's Principles of Surgery.

After he quitted London, he published in 1837 his "Institutes of Surgery," which were intended as a sort of textbook to his course of lectures in the University of Edinburgh; and his last work was his "Practical Essays," the first volume of which appeared in 1841, and the second in 1842.

Besides these there are many anatomical and surgical papers in the Medico-Chirurgical Transactions, one of which, "On the varieties of diseases comprehended under the name of Carcinoma Mammæ," contains the results of his observations made in the cancer ward of the Middlesex Hospital.

In connection with physiology the name of Bell will go down to posterity side by side with that of Harvey and

of Hunter; principally associated with his important and brilliant discoveries on the functions of the nervous system. It would be impossible here to go into any account of these views, and they are now known throughout the world. Let it be remembered, in regard to them, that the value of his observations is not to be calculated solely by the importance of the facts ascertained concerning the nerves themselves; but that a new direction has been given to the current of physiological inquiry by the investigations, and vast improvements have been introduced in our knowledge of the functions of the various organs of the body generally, while seeking to elucidate the uses of the nerves distributed to them. His views on the subjects were first propounded in his lectures in Great Windmill Street, and in a small essay written in 1811, entitled "Idea of a new anatomy of the brain." But it was in the papers of the Royal Societies of London and Edinburgh, begun in 1821, and continued till the period of his decease, that his opinions were fully discussed. In acknowledgment of the merit of these splendid discoveries, the gold medal of the Royal Society was awarded to Sir Charles Bell in 1829.

The matter contained in these papers has since been published in separate volumes, at different times.

The only other physiological work, besides those already named, was "An Essay on the Forces which circulate the Blood," in 1819; containing some singular and ingenious views on that subject, in opposition to the mechanical doctrines of the day.

Before concluding this short sketch of one who for nearly half a century devoted his high talents to the advancement of our profession, it may be expected that we should say a few words on his private deportment in social life. His manners, we would say, were characterized by unpretending simplicity, combined with an openness and cheerfulness of demeanour, the best signs of an honourable and self-respecting mind. Refined in his tastes—blending in his manner great courtesy, with a dignity which commanded respect—his conversation flowing easily and naturally from the sources of his richly-stored and fertile mind, aided by his retentive and ready

memory, and heightened by a vein of true and refined wit—he was in every way calculated to be an ornament to society.

With his singleness of character were united great firmness and moral courage: the fear of consequences never deterred him from inflexibly following what he considered his duty; his energy of mind often drew him into a forgetfulness of every object foreign to that which was occupying him; of what the world would have considered his interests he was never careful. Hence he was often regarded by those who did not know him as cold, indifferent, and severe; persons who really knew him will never cease to remember how entirely the reverse was his true disposition. He had a warmth of feeling which made him ever keenly alive to the happiness or misfortunes of his friends; ever ready to afford them his advice and assistance, and to promote their welfare to the utmost of his power.

Constantly exercising, even in relaxation, his acute powers of observation and natural ingenuity, objects to occupy and interest him were seldom wanting. Indeed he displayed, in a remarkable manner, an enlightened sympathy with every, even the meanest, work of nature. From this cause it may have arisen that his pleasures and solacements from the toils of business were usually obtained from simple sources. One principal feature of his character was his being an ardent admirer of the beauties of the country, to which no doubt his facility and admirable skill in sketching from nature greatly contributed. For many of his latter years he was a keen fisher, a sport the love of which was partly cherished on account of the healthful exercise it secured to him; but more, perhaps, for the delightful rural scenes into which it carried him. In fine, we may sum up his private character by saying, that, joined to his highly philosophical and powerful intellect, he possessed a heart warm and generous, and susceptible of the kindest impressions. Gifted with qualities to command admiration in others, it was the affection of those immediately around him, and connected with him by long friendship, for which he seemed principally to live.

[For the particulars connected with the decease of Sir Charles Bell we refer to our No. for May 6.]

# ROYAL MEDICAL & CHIRURGICAL SOCIETY.

THE PRESIDENT IN THE CHAIR.

May 24, 1842.

*On the separate and combined Actions of the Muscles of the Eye and its Appendages.* By EDWARD HOCKEN, M.D.

The object of the author in this paper was to consider the physiology of the obliqui, recti orbicularis palpebrarum, levator palpebræ ciliares, and tensor tarsi, both separately and in combination. This he does considerably in detail, illustrating his observations by reference to the phenomena of strabismus. The novelty of the facts and arguments adduced by the author, however, seemed to us not quite so evident, as their intrinsic value was admitted and unquestionable.

*Cases of Malformation of the Heart.* By BELL FLETCHER, M.D., Physician to the General Dispensary, Birmingham.

The first of these was one of aneurism and dilatation of the pulmonary artery, with malformation of the heart and arteries.

The patient was a young woman, æt. 19, who, with the exception of slight cough, had enjoyed good health up to the age of 16; since that time she has had frequent attacks of pain in the chest, cough, and dyspnoea. She was first seen by the author in August 1839, when she had cough and dyspnoea, with slight hæmoptysis. On the left side of the sternum, between the second and third ribs, there was a superficial pulsation, with purring tremor, and a loud rasping souffle; the impulse of the heart was normal. She recovered under the use of remedies employed, but had several similar attacks between that time and Dec. 1840, when she had severe inflammation of the lungs. At this time, the pulsation of the chest mentioned above was more extensive, the souffle louder, and it had assumed a seesaw character, masking the sounds of the heart. The patient lingered for some time, and though relieved by treatment, died rather suddenly on May 1st.

*Examination after death.*—Our account of the appearances must be confined to the state of the heart and great vessels. The heart was about twice its natural size; its parietes of the natural thickness, the dilatation being equal in all their cavities. The right auricle, excepting the dilatation and hypertrophy, perfectly normal; the tricuspid valves healthy. The auriculo-ventricular opening is dilated, so as to render the valves somewhat ineffective. In the right ventricle the columnæ carneæ are thicker than normal:

the orifice of communication with the pulmonary artery is much dilated. Immediately below the opening is a communication with the left ventricle, which measured about one-third of an inch across, and one-eighth from above downwards. The two anterior semilunar valves are perfect, of the normal size, but much thickened; the posterior one imperfect, being so narrow and constricted in its middle portions, as to be a mere band-like projection from the artery.

The pulmonary artery is much dilated, being five inches and three quarters in its greatest circumference (internal measure); the branches of the pulmonary artery are much dilated. The left auricle is healthy, save the dilatation and hypertrophy; the auriculo-ventricular opening is dilated; the mitral valve is normal in structure, but not sufficient to close the dilated opening perfectly.

In the left ventricle the columnæ carneæ are thicker than usual; and at the base of the cavity is seen the opening of communication with the right ventricle.

The opening of the aorta is rather dilated: semilunar valves healthy. The ascending aorta is dilated about one half beyond its natural size. The distribution of the arteries from its arch may be considered more as divisions of the artery than branches. After giving off these, it is contracted to about one-third of its capacity in the ascending portion; and the coats of the vessel are thinned in this situation. This contraction extends from the root of the left subclavian to the adjoining with the ductus arteriosus, where the artery is still further contracted by a hardened thickening of the coats, projecting into its anterior, so as to contract the capacity again to be one-third; so that at this point the capacity of the artery is not more than one-ninth of its ascending portion. Just on the distal side of the constriction is the communication with the ductus arteriosus, and immediately below it the artery is dilated to the usual size of the descending aorta.

The second case was one of cyanosis; the subject of it a young man, aged 21. He had great dyspnoea, palpitations, anasarca, and a blue state of the skin generally. The heat of the body in the axillæ or mouth was not more than 80° of Fahrenheit: the state of puberty was not developed. The impulse of the heart was greater than normal. There was a *bruit de soufflet*, beginning with the first sound of the heart, sufficiently long to mask the second: it was heard most distinctly under the middle bone of the sternum.

*Examination after death.*—The heart and large veins enormously distended with dark-coloured blood. The organ much enlarged and hypertrophied. The septum of the



auricles so totally absent as to convert the two into one.

The veins of the general circulation enter it on the right side of a line drawn in the situation of where the septum should be, and the pulmonary veins on the left of it. The auriculo-ventricular openings are large, and between them the septum of the ventricles is much notched out. The orifice of the aorta is contracted to a third of its usual capacity, and its semilunar valves are diseased and ineffective.

The liver much congested, and enlarged about a third more than its usual size.

The Society then adjourned to the 14th June.

### MEDICAL CHARITIES' BILL.

At the anniversary meeting of the Irish Medical Association, recently held, the following resolutions were passed expressive of the opinion entertained by the members of the Medical Charities' Bill for Ireland:—

“That we have learned that the proposed Medical Charities' Bill was drawn up and printed without the knowledge of the Attorney or Solicitor General or Under-Secretary for Ireland; that it was pressed upon the notice of Lord Eliot under misrepresentations, that nobleman having been incorrectly informed by Mr. Nicholls, the Chief Poor Law Commissioner, that its provisions had been made known to and approved of by certain eminent medical practitioners in Dublin; that some of these gentlemen denied the truth of Mr. Nicholls's statements, in his own presence and before Lord Eliot; that we therefore consider him unfit to give any opinion as to the management of interests so important as those of the medical charities in Ireland.

“That it is our opinion that the report and supplemental report upon the medical Charities in Ireland, published by the Poor Law Commissioners, contain many unfounded statements; that the truth has been in many instances suppressed in these publications; and that they do not, therefore, furnish safe and sufficient information whereon to found any legislative measure.”

### SIR R. CHERMSIDE.

This gentleman, who has long been resident in Paris, where he enjoys extensive practice, has just been nominated a Knight of the Legion of Honour, by his Majesty the King of the French.

### MACCLESFIELD MEDICAL AID SOCIETY.

*To the Editor of the Medical Gazette.*

SIR,

I HAVE just seen in your number of the 20th inst. a letter, dated May 2d, from one who signs himself “A Constant Reader and Subscriber,” in which my name appears in connection with a society which was formed here about six months ago. About four months since, a letter, which I have every reason to believe emanated from the same source, appeared in the *Lancet*, to which publication, and not to your journal, I strongly suspect the author of them is a “Subscriber.” Of the purport of this I was only made acquainted by a medical friend here; the *Lancet* being a work which I have not opened half a dozen times in my life. I treated this with the silent contempt which I feel alike for the author and his veracious productions. Since, however, a letter has appeared in your journal, and devoid of those scurrilous editorial remarks which characterized the former, I think it but just to myself that I should give you more correct history than that furnished by your correspondent; putting you in possession of facts in connection with it which he was not sufficiently ingenuous to inform you of; correcting those statements which are wilfully misrepresented; denying others which are totally false, and thus placing my professional character and conduct in a different light to that in which he would make it appear by a perusal of his letter.

No one can have a greater abhorrence than myself of the truly despicable system of medical contracts—from the poor Union doctor, receiving his sixpence or shilling a head, to the practitioner of a large town with his ten or twenty pounds for a family. The system of contracts for clubs is one which prevails, to a great extent, here; and to the effects produced by these may be mainly, if not entirely, attributed the departure from that Utopian state which your correspondent would have us believe formerly existed, but which, if it ever did exist in reality, must, I should opine, have certainly been prior to his establishment here. The name of club doctor here is coeval with the introduction of a junior practitioner a few years since—several years before the formation of the obnoxious society; which can be clearly proved to be an emanation from, and extension of, the club contract system. Now what has been the effect of these clubs? An old-established, respectable, and respected practitioner here, and who had a very good country practice amongst the farmers, in-

formed me (before the society had existence) that all these people were now attended by the club doctor, and that he had, in consequence, ceased to keep a horse, not having employment for one.

Perhaps it is not known that societies similar to this exist in most, if not all, the small towns in the manufacturing districts of Cheshire and Lancashire. The one here, however, originated with a lodge of Odd Fellows, who, seeing the principle recognized and acted upon, so far as regarded the members themselves, considered that the same might be carried out so as to include their families; many being afterwards admitted who were not members of the lodge. It is necessary for me to mention this, in order to disprove the statement of your correspondent, which would make it appear that I was the only one who would accept of the office. This, however, he is as well aware as myself is quite at variance with facts which I shall presently disclose. With the origin and formation of the society I had nothing to do. Until I was waited upon by several persons about the end of last November, and requested to undertake it, I was not even aware of its existence. Not so, however, another practitioner, of much longer standing than myself, and with an extensive and respectable practice: a fortnight before it was offered to me he offered his services to them, which were, however, declined. He could not plead ignorance of the nature of the office which he sought: his informant, from having attended the meetings, was able to give him the fullest information. I hesitated at first to accept the office, requesting a few days for consideration; after which, and consulting some friends, medical and non-medical, I consented. I had two motives for this: to prevent my patients being clandestinely obtained through the medium of the clubs; and not without a hope that it might possibly be the means of doing away with this system altogether.

Of the publication of the placard I knew nothing until one was put into my hands by the printer, and my name was attached without my consent, or even knowledge. Had I known that any thing of the kind was in contemplation, I should have strongly reprobated it. A few days prior to the Society's commencing operations, a meeting of the medical men was called to discountenance the affair, and to prevail upon me to have no connection with it; and the man who was loudest in his condemnation of it, and who most strongly expressed his determination to have no connection with any thing of the kind, was the one whose previously proffered services had been declined.

A copy of his note, which was read at the

meeting, I now subjoin, having the original still in my possession:—

"Gentlemen, — Understanding that you are thinking of appointing a medical officer to your Lodge\*, I beg to offer my services in that capacity, and to say that in case you think proper to elect me, my best energies shall be devoted to your service.

"I am, gentlemen,

"Your obedient servant,

—"

On this being read, he stated that the step had been sanctioned by a practitioner then present; to whom he referred for confirmation of this. I consented to give up my office as soon as I consistently could, conditionally that the club system should be entirely abandoned; an agreement to which effect was drawn up, and signed by all present. In accordance with this I resigned my office some weeks since; but as yet no disposition has been shown on the part of others to follow my example.

The remuneration from the society was much greater than that from the clubs. The latter pay from one shilling and ninepence to two shillings each in the town, and, I believe, half a crown in the country. From this, however, has to be deducted the subscription as a member of the club, which, when the club is small, would perhaps, where he received one shilling and ninepence, leave him on an average one shilling and threepence each. In the society the sum paid was two shillings and twopence each, besides extra subscriptions, entrance, &c. which would approach three shillings. From the latter fund I was to receive extra payment for surgical cases and injuries of a severe character. One of the clubs is six miles, at least, from this place; and the Doctor might have to go eight miles to see a patient.

In denying the truth of the other statements contained in the letter I shall be brief. Before I attended a single case of midwifery, it was arranged that for this I should receive extra payment. I attended two cases; an assistant, for the sake of practice, attended a few more. This arrangement for payment was at no subsequent period altered. So much for the assertion that I attended labours gratuitously! There were very few members in the country, and none were admitted, beyond the limits of the town, after January; after the first of which month no canvass took place for members. With reference to the class of people who were members, if such as these constituted his practice, then indeed would his pocket be

\* This is the Lodge above alluded to.

affected; his condition would be truly pitiable.

I would remark that the letter is dated a fortnight after I had given up my office, and published nearly five weeks after. That I had done so was known to all the medical men here before the date of the letter. Your correspondent is an anonymous one. Were his letter written for the purpose of correcting some abuse in the profession generally this might be justifiable; but when it is an individual attack, I could not conceive it possible that any one would be so deficient in manliness as not to dare to avow his name.

I am, sir,

Your obedient servant,

J. TURNER.

Macclesfield, May 23d, 1842.

ADDITIONAL CASES  
IN PROOF OF THE  
EFFICACY OF IODINE AND  
MERCURY,  
IN THE CURE BOTH OF THE  
PRIMARY AND SECONDARY SYMP-  
TOMS OF SYPHILIS.

BY JOHN WICKENS WEST, M.R.C.S.L.

(*For the London Medical Gazette.*)

IN consequence of the success which attended the practice I have adopted for some time past, of administering iodine and mercury both in the primary and secondary symptoms of syphilis, I was induced to communicate to the profession, through the medium of the *MEDICAL GAZETTE*, the result of that experience, as exemplified in a few of the most recent and pointed cases. I have, in a subsequent number of the journal, the pleasure of noticing that the plan I pursued had been put in force by my friend, Mr. Dodd, Surgeon, of Northampton, whose efforts, in two cases of primary syphilis, were crowned with equal success; and I feel particularly obliged to him for his ingenuous conduct in immediately giving publicity to it. The combined influence of the two remedies appears to me, in all instances in which I have tried it, to obviate the necessity of ever pushing the mercury to an approach to salivation; and the effects are so mild, that the usual constitutional disturbance, which is produced in the system when under the influence of the latter remedy, is altogether prevented. Iodine, administered by itself in some form or other, especially in that of the hydriodate of potash, has succeeded in the hands of many practitioners, where mercury had signally failed, and was, moreover, producing prejudicial effects on the constitution.

Now the administration of the two medicines at the same time has succeeded in cases where both iodine and mercury, given separately, had proved altogether ineffectual. There is no disease incidental to the human frame which is more frequently treated by empirics and empirical remedies than syphilis in all its forms, from the chancre on the penis to nodes on the shins; and the principal ingredient of the medicines so administered is mercury in some shape or other. The sad effects on the constitution, of the inordinate use of this remedy, is constantly witnessed by medical men; and in order to prevent it, in some degree, we ought to endeavour to introduce into general practice a plan of administering an efficacious remedy, which is not so likely to expose, even in empirics' hands, the patient to the dangerous influence of a powerful medicine, which often produces a more baneful effect on the constitution than the disease it is intended to eradicate: "the friend often does more mischief than the foe." I shall now illustrate the particulars of several cases in addition to those already published in this journal, in support of the opinions adduced.

CASE 7.—George King, æt 22, by occupation a servant, applied to me November 4th, 1840, with a copper-coloured eruption, extending over the whole body, ulcerated throat and tonsils, and severe pains in his limbs, especially at night. He informed me, that about twelve months ago he contracted two large chancres on the glans penis, and slight discharge from the urethra. He took some medicine from a druggist until his gums became tender; and shortly after this the sores healed without local applications. Two months from that period he was again so unfortunate as to have another chancre on the glans penis, and likewise a suppurating bubo in the right groin, both of which, however, under medical treatment, he got rid of, and he continued for some months apparently without a vestige of the disorder; indeed until a short time before consulting me for the symptoms he now labours under.

I ordered him to take the following medicine:—

℞ Tinct. Iodinæ, ℥ xx. ex cyatho aquæ, ter quotidie.

℞ Pil. Hydrarg. gr. iss.; Pulv. Ipecac. Comp. gr. iv.; Conf. Rosæ, q. ut. fiat pil. nocte maneque sumend.

℞ Solut. Chlorid. Sodæ, ℥ iss.; Aquæ Puræ, ℥ ivss. fiat gargarisina frequenter utend.

Nov. 10th.—Complains less of his throat, and the ulceration on the tonsils healing: the eruption as before. Has better nights, being freer of pain.

14th.—The throat has got well; the eruption disappearing, and in every other respect much better.

Cont. Med.

21st.—Quite recovered.

CASE VIII.—W. T., æt. 32, applied to me Dec. 16th, 1840, with chancre and a bubo in each groin, both of which were fast approaching to a state of suppuration. He was suffering from languor and debility, in consequence of a long use of mercurial medicines, which had appeared rather to increase than diminish the disease.

I recommended the following:—

R Tinct. Iodinæ, ℥xv. ex cyatho aquæ ter die.

R Pil. Hyd. gr. iss.; Pulv. Ipecac. c. gr. iij.; Conf. Rosæ, q. s. ut. ft. pil. omni nocte sumend.

22d.—Has gained strength since I first saw him, and the character of the sore on the penis slightly improved. The buboes, under the use of linseed poultices, have been freely discharging, and they appear disposed to heal.

January 2d.—The chancre is nearly healed, as well as the buboes: still suffers from debility and loss of appetite. I recommended change of air, and to continue the iodine drops and pills.

12th.—Heard from him this morning, and he informed me the sores were healed, and that he felt better from the change.

24th.—Has returned from the country in better health, with the chancre and buboes quite healed.

REMARKS.—The buboes in this case were promoted towards suppuration evidently by the action of the mercury on the system. It acts as a universal stimulant, particularly on the lymphatic system; and this is one reason why buboes generally suppurate at the close of a mercurial course.

CASE IX.—J. R., æt. 44, an unmarried man, consulted me in consequence of labouring under an eruption on the skin of a leprous character, especially affecting the left leg and thigh; and also a chronic enlargement of the inguinal glands of the left groin, which followed an attack of gonorrhœa and chancre, and had continued ever since, although he had been cured of the latter disease for some time. He informed me he had led a very irregular life, and had several times contracted the venereal disease, for which he had been treated with mercury. He had at times a pain and difficulty in voiding his urine, which, on examination, I found to depend upon the enlargement of the prostate gland. I ordered him—

Balneum Calidum alt. Noct.; R Ty. Iodinæ ℥xx. ex aqua ter die. Pil. Hydrarg. gr. iij.; Pulv. Ipecac. Co. gr. iv.;

Conf. Rosæ, q. s. ut ft. pil. nocte manequè sumend.

R Potassæ Hydriodatis, 3j.; Ung. Cetacei, 3j. ft. unguentum, hujus pauxillo oblinatur perineum nocte manequè.

January 10th.—It is now ten days since I first saw him, and he complains of less pain and difficulty in making water, and there is an evident improvement in the eruption.

22d.—Symptoms much improved; pain in making water entirely removed.

Cont. Guttæ et Pilul.

22d.—The eruption disappeared, and in every respect quite recovered, with the exception of slight enlargement of the inguinal glands.

REMARKS.—In this case there was combined with the secondary symptoms evident chronic enlargement of the prostate gland, on which the use of the hydriodate of potash locally applied had a very marked effect.

CASE X.—Mary Hewlitt, æt. 26, a woman of dissipated and profligate habits, and who had been on the town for some years, applied to me with the following symptoms:—Ulcerated throat, swelling on the os frontis, excruciating pains at night, and a foetid discharge from the nostrils. She stated she had had the venereal disease several times, and had taken a great quantity of pills at various times, which, on one occasion, caused her to have a sore mouth. I ordered her the following:—

R Tinct. Iodinæ, ℥xx. ex aqua ter quotidie.

R Pil. Hydrarg. gr. iij.; Pulv. Opii, gr. j. omni nocte sub forma pilulæ.

This plan was persevered in for six weeks, when I had the satisfaction of noticing considerable improvement in her symptoms. The swelling on the os frontis had disappeared, and she experienced less pain at night.

I had not an opportunity of seeing the termination of the case, as the woman quitted the town.

CASE XI.—Charles Boyt, æt. 30, contracted a large Hunterian chancre on the glans penis. He immediately applied to a druggist, who prescribed mercurial pills, which he persevered in for some time, but without any improvement in the appearance of the sore; and he was experiencing considerable constitutional irritation. When I saw it, it was very unhealthy, with indurated base, and much irritation of the surrounding parts. I ordered Lotio Nigra parti affectæ.

Pil. Hydr. gr. iij.; Pulv. Opii, gr. ½; fiat pil. bis quotidie sumend.

R Iodinæ ℥xv. ex poculo aquæ ter quotidie.

October 8th.—Chancre much the same,

but with less irritation of the surrounding parts. Has a slight copper-coloured eruption on the breast and arms.

Cont. Pilul. et Guttæ.

14th.—The eruption has disappeared, and the chancre appears disposed to heal.

Cont. Guttæ. Omit Alia.

21st.—Chancre nearly healed.

30th.—Chancre well.

CASE XII.—Mary James, æt. 22, a woman of the town, was received into the Poole Union, October 4, 1840, with a bubo in the left groin, inflamed and painful; chancrous excoriation in the vagina, and spongy, fungous excrescences near the anus, which latter symptom she had had some time. Has had the venereal disease several times, and has taken much medicine. I ordered—

R Argenti Nitratis, gr. vj.; Aquæ Pluvial, ʒij.; ft. lotio et applicetur paululum parti affectæ nocte manequæ.

R Pil. Hydr. gr. iv.; Pulv. Ipecac. c. gr. v. ft. pil. omni nocte sumend.

Tinct. Iodinæ, ℥xx. ter quotidie ex aqua.

8th.—The excrescences about the anus have nearly separated from the part; and the chancre looks healthy, and discharging.

Cont. Pilulæ et Guttæ.

14th.—The chancre healed, and the other symptoms improving rapidly.

21st.—Quite well.

CASE XIII.—Wm. Tailor, æt. 46, by trade a shoemaker, applied to me in consequence of severe pains in his limbs, which he supposed to be rheumatic. On the tibia of the right leg there was a painful swelling, which had the appearance of a chancre. He told me about ten years ago he contracted a chancre on the glans penis, but soon got rid of it under the use of medicine, and from that period, until about a month ago, has never experienced any thing of the kind.

Balneum Calidum alternis noctibus.

Fotus Papaveris parti affectæ omni nocte manequæ.

R Pil. Hydr. gr. iij.; Pulv. Ipecac. co. gr. v. Ft. pil. bis quotidie sumenda: sum. Tinct. Iodinæ, ℥xx. ex aqua.

This treatment was continued a fortnight without intermission, when he lost the pains in his limbs, and the swelling subsided.

REMARKS.—There can be little doubt, from the history of this case, that it was one of secondary symptoms; and in this instance as in others in which I have tried it, the iodine and mercury, given in conjunction, had a very rapid and beneficial effect. From the experience I have already had in these remedies, I think there is very little doubt

but what they will be found materially to relieve, and, in the majority of instances, cure, almost any form or stage of the venereal disease.

CASE XIV.—Mary Dymick, æt. 45, married, and the mother of six children, applied to me August the 5th, 1841, with an extensively ulcerated throat: both tonsils were entirely gone; an eruption of the leprous character on the legs and arms; violent pains in her limbs, and a large node on the tibia of the right leg. Her husband communicated a chancre to her about two years before, and she neglected to adopt any plan for some time. However, after taking pills for a few days only, she got well. At the end of ten or eleven months from the period she first observed the sore, she discovered an eruption on the arms, which was then copper-coloured, and did not assume its present nature for some months. This eruption was soon followed by sore throat and pains in her limbs, which increased rapidly.

Solut. Chlorid. Sodæ, ʒiss.; Aquæ, ʒivss. ft. gargarisma frequenter utend.

Cap. Pil. et Tinct. Iodinæ.

15th.—The eruption is rather better, but still violent pains in her limbs.

September 6th.—Her throat is better; eruption gone, and the node less painful.

I did not attend her to the termination of the complaint, but understood she gradually improved in health.

REMARKS.—This was a severe case of secondary symptoms, in which very little medicine had been taken for the primary disease. The result of the practice adopted was a mitigation of the symptoms, although not entirely eradicated at the time she omitted the remedies.

## TUMORS FORMED ON THE TISSUE OF CICATRICES.

M. GIMELLE brought before the Royal Academy of Medicine at Paris a young soldier having upon his body numerous cicatrices, many of which had become the seat of tumors of a doubtful nature. For instance, beneath the left ear was a tumor of pale colour, soft, unaccompanied by pain, and united to the skin by its whole circumference. On one of the shoulders was to be seen an analogous production, except that the sides of this were more raised, and it was supported on a pedicle; its centre was not completely cicatrized, and gave vent to a purulent exudation. The same person bore on the wrist another deep wound, which appeared to have involved the radial artery, and the corresponding fingers were flabby, swelled, and livid. These different growths, the nature



of which is not accurately decided, gave rise to much interesting discussion. MM. Velpeau and Gerdy regarded the production beneath the ear as very analogous to, if not identical with, the keloide. That on the shoulder, which the first of these surgeons thought also a pediculated keloide, was considered by M. Gerdy as a vegetation, similar to those which frequently form on wounds, which not being checked had grown prominent, and assumed the form of a mushroom. M. Velpeau feared the return of the tumors if removed. MM. Gerdy, Londe, Blandin, and Laqueau, thought they might be extirpated with very good hope of cure."—*Archives Générales de Médecine.*

ON THE USE OF SOLUTION OF CHLORINE IN SCARLET FEVER.

By DR. CLEMENS,  
Of Frankfort-on-the-Maine.

THE author found the Aqua Oxymuriatica (solution of chlorine) of the Prussian Pharmacopœia decidedly antiphlogistic, and beneficial in every epidemic of scarlatina. After the inflammation of the throat, and the congestion towards the head, had been diminished by an emetic, and the frequency of the pulse lessened, or bad symptoms about the brain and eyes removed by leeches, the author gave gentle cathartics for several days running. He then prescribed a mixture consisting of from one to four drachms of aqua oxymuriatica, and three or four ounces of distilled water; the whole to be taken in twenty-four hours by a child from eight to twelve years old. He added no syrup, in order to avoid decomposition. Dr. Clemens continued its use during the period of desquamation, but omitted it sometimes for days together; alternating it with purgatives if the bowels were costive.—*Schmidt's Jahrbücher.*

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Monday, May 23, 1842.

O. Royle.—C. P. Symonds.—A. G. Field.—W. M. Burke.—M. Ainger.—J. J. Sparham.—J. Green.—A. Anderson.—H. Uwina.—F. B. Pearce.—J. T. Waller.—G. A. Shelton.—J. Ward.—E. Allen.

Friday, May 27, 1842.

T. S. Rising.—J. Walsh.—A. Willy.—W. B. B. Scriven.—W. S. Jones.—R. Walsh.—J. Kilroy.—F. R. Spackman.—E. M'Donnell.—J. Drummond.—J. Vondy.

Monday, May 30, 1842.

H. S. Lyford.—S. O. Lane.—T. B. Ryan.—T. E. White.—T. U. Nutt.—J. S. Rutter.—G. Senior.—E. R. Richardson.—W. M. Kelly.—J. Broadhurst.—R. Tomkinson.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, May 19, 1842.

W. G. Walker, East Bourne, Sussex.—C. N. Sissmore.—R. Ransom, Cambridge.—F. Ranger, Cranbrook, Kent.—J. W. Maltby, North Shields.—T. J. Austin, London.—G. M. Phillips, Eardsey, Herefordshire.—J. H. Greenwood, Manchester.—W. G. Watt, Deal.—J. J. Davies.—A. N. Jones, Cheltenham.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, May 21, 1842.

Small Pox .....	3
Measles .....	20
Scarlatina .....	15
Hooping Cough .....	24
Croup .....	12
Thrush .....	4
Diarrhoea .....	3
Dysentery .....	0
Cholera .....	0
Influenza .....	0
Typhus .....	22
Erysipelas .....	2
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	143
Diseases of the Lungs, and other Organs of Respiration .....	265
Diseases of the Heart and Blood-vessels ....	28
Diseases of the Stomach, Liver, and other Organs of Digestion .....	52
Diseases of the Kidneys, &c.....	6
Childbed .....	4
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	2
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	115
Old Age or Natural Decay.....	55
Deaths by Violence, Privation, or Intemperance .....	31
Causes not specified .....	3
Deaths from all Causes .....	805

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

May	THERMOMETER.	BAROMETER.
Wednesday 25	from 36 to 59	29.18 to 29.83
Thursday . 26	46 63	29.74 29.75
Friday . . 27	44 66	29.86 29.92
Saturday . 28	50 66	29.95 30.05
Sunday . . 29	38 66	30.08 30.00
Monday . . 30	44 69	29.93 30.05
Tuesday . 31	44 68	30.10 30.16

Wind, S. and S.W.  
Cloudy, with rain at times, on the 26th and 27th; otherwise generally clear.  
Rain fallen, .605 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE  
LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JUNE 10, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

Delivered at King's College, London,

BY DR. WATSON.

*Suppression of urine. Diabetes: qualities of the urine; symptoms; anatomical appearances; general pathology of the disease; treatment. Diuresis.*

SYSTEMATIC writers have adopted the term *Ischuria* to express that condition in which no urine is voided. It includes, therefore, those cases in which no urine is secreted; and those in which, although secreted, it is not discharged from the body. Now these two conditions are exceedingly different from each other in most respects; and I shall prefer making use of the two plain English names, *suppression* of urine, and *retention* of urine. Even these terms are sometimes confounded with each other. In *suppression*, the secretion is suspended: in *retention* it may be as active as ever. Retention of urine is a surgical case; involving points of great practical interest. Suppression belongs to the physician: and the technical term for it is *ischuria renalis*. It is sometimes spoken of as paralysis of the kidney; a phrase to which I object, because I think palsy is a word which ought to be restricted to a loss of power over the muscular fibre.

This affection usually occurs in persons who are advanced in life, and inclined to corpulency. Why it should be so I cannot tell you, but such is the fact, as stated by most observers. Sir Henry Hallford has related one of five instances of this disease that he had met with in the course of seven-and-twenty years. He says it was an exact copy of all the others that had fallen under his notice: and as his account of the general

course of the symptoms coincides with the statements of other writers, I may give you his narrative, in lieu of a formal description.

"A very corpulent robust farmer, of about 55 years of age, was seized with a rigor, which induced him to send for his apothecary. He had not made water, it appeared, for 24 hours. But there was no pain, no sense of weight in the loins, no distension in any part of the abdomen:—and therefore no alarm was taken till the following morning, when it was thought proper to ascertain whether there was any water in the bladder, by the introduction of the catheter: and none was found. I was then called (says Sir Henry), and another enquiry was made, some few hours afterwards, by one of the most experienced surgeons in London, whether the bladder contained any urine or not: when it appeared clearly that there was none. The patient sat up in bed, and conversed as usual, complaining of some nausea; but of nothing material in his own view: and I remember that his friends expressed their surprise that so much importance should be attached to so little apparent illness. The patient's pulse was somewhat slower than usual; and sometimes he was heavy and oppressed."

"I ventured to state (continues the author) that if we should not succeed in making the kidneys act, the patient would soon become comatose, and would probably die the following night: for this was the course of the malady in every other instance that I had seen. It happened so: he died in 30 hours after this, in a state of stupefaction."

This is the curious and important point in the history of such cases. If no urine be separated from the blood, coma soon supervenes, and death. It is believed that these consequences result from the detention of *urea* in the system. Urea is a mere excrement, which, in health, is removed from the blood by the kidneys, as fast as it enters that fluid. When it is not so carried off,

it accumulates in the blood, circulates with it to every part of the body, and acts as a poison, especially upon the brain. This is one of several cases, shewing that the carrying fluid of the body may become the vehicle of disease and death if it be not duly purged of deleterious matters which are incidental to the unceasing processes of organic life. If *carbonic acid* be not extricated by the lungs, the animal functions are as certainly and almost as speedily extinguished by that gas, as the flame of a taper might be. And we have recently seen that when the outlet from the liver is shut up, when the blood is not purified from the excrementitious *bile*, the powers of animal life are weakened, and sometimes utterly and rapidly destroyed.

Suppression of urine, for a considerable time, is not, however, necessarily or universally fatal. Patients labouring under the epidemic cholera would secrete not a drop of water for some days; and yet recover. It was remarkable how entirely free such patients were from any approach towards coma. Was the urea here drained off from the blood in the enormous and unnatural flux from the stomach and bowels? I think it probably was: but I do not know that any chemical search was ever made for that substance in the fluids so effused. There are, however, some very singular instances on record of persons who have passed days and even weeks without secreting urine; and without shewing any other indication of impaired health. What degree of credit such narratives deserve I do not know; but assuming that there was neither fraud nor mistake, it may be suspected that either the natural secretion was compensated for by some vicarious or supplemental discharge; or that a *small* quantity of urine was actually separated by the kidneys. "If any water, however small the quantity (remarks Sir Henry Hallford) had been made in these cases, I should have thought it possible that the patients might have recovered: for it has often surprised me to observe how small has been the measure of that excrementitious fluid which the frame has sometimes thrown off, and yet preserved itself harmless. But the cessation of the excretion *altogether* is universally a fatal symptom in my experience, being followed by oppression on the brain." The same eminent physician states that in three of his five cases there was observed a remarkably strong urinous smell, in the perspiration, for 24 hours before death. This I believe is of common occurrence in such cases. Other patients have vomited, or passed by the bowels, watery matters possessing some of the sensible qualities of urine: and a urinous fluid is said to have been found in the ventricles of the brain in some of the fatal examples.

I have spoken of suppression of urine as a malady, though it probably is never any thing more than a symptom. Yet it is one of those symptoms which from our uncertainty respecting their origin and determining cause, we are obliged to treat, and to study, as if they were substantial diseases. In the only well-marked instance that I have seen of suppression of urine coming on in an apparently healthy person, some blood had appeared in the urine for a day or two before the secretion was totally suspended; and the kidneys were found gorged with blood. Extreme congestion, or inflammation, of the substance of the gland, is probably at the bottom of many of these cases. The same train of symptoms supervene not unfrequently upon organic renal disease. They happen, too, when the ureters become impervious, from disease, or from impacted gravel. In this condition urine continues to be secreted, for a time at least, and distends the ureter behind the seat of the obstruction. The apoplectic state which ensues may arise from a re-absorption of the secreted fluid; or, in consequence of the obstacle, the secretion itself, after going on to a certain point, may stop, and then the case becomes a case of suppression.

Respecting the treatment of this most formidable condition I can say but little. Cupping upon the loins, venesection if warranted by the state of the pulse, the hot bath, sudorific medicines, purgatives, and large warm enemata, seem to me the kind of remedies indicated. To endeavour to force the secretion of urine by strong stimulating diuretics, would strike one, *à priori*, as being hazardous. Yet this practice has its advocates; and should experience declare in its favour, theoretic objections ought to be disregarded. If benefit is so to be obtained, certainly the best drug for our purpose will be cantharides. Dr. Elliotson refers to some examples of its success in the hands of Sir Astley Cooper; and afterwards of another practitioner who took the hint from Sir Astley. He suggests that as the tincture of cantharides is a very uncertain preparation, the remedy should be given in the solid form, a grain at a time, and that a large blister should be laid upon the loins. Beyond these hints I am unable to give you any assistance towards the management of this obscure but serious complaint.

The opposite condition of the kidney, in respect to its peculiar function—that, I mean, in which its secretion is largely and morbidly *augmented*—is scarcely less fatal than the total suppression we have just been considering; but it is not so rapidly fatal. When the amount of urine secreted and passed is permanently too great, when

it is constantly running off, as it were, from the system, the patient is commonly said to have *diabetes*: from *διαβαίνω*, to run through.

But it is not every case of an excessive flow of urine that deserves to be called diabetes. Great quantities of aqueous urine are made by hysterical and nervous patients. We all make more water in cold weather than in warm; the functions of the skin and of the kidney compensating each for the occasional defect of the other. Certain drugs and articles of diet are also well known to cause a temporary excess in the quantity of urine secreted.

In fact, although the quantity of the urine voided is the most obvious and striking symptom of diabetes, its definite and characteristic symptom is a most remarkable change in the *quality* of that liquid: in its becoming loaded with sugar. You will find, indeed, two species of diabetes mentioned by many authors—the diabetes *insipidus*, and the diabetes *mellitus*. The former term ought in my opinion to be abolished. If it refers merely to an unnatural abundance of urine, not otherwise differing in its composition from healthy urine than in containing a large proportion of water—by calling such a state diabetes, we link together in the same genus two essentially different conditions. In true diabetes the urine is never without sugar. The quantity may indeed be small; and it may not be sensible to that coarse test, the *taste*: but modern observers almost all agree in rejecting any species of diabetes, in which the urine is not at all saccharine.

The sensible qualities of diabetic urine differ strikingly, in many particulars, from those of the urine of health. Its chemical quality differs strikingly too, as I have already told you; but it is in one particular only. Fortunately no particular skill is required to recognize the morbid secretion.

Diabetic urine is light coloured, and transparent; of a pale straw, or greenish tint. Its odour is peculiar. According to Dr. Prout the scent somewhat resembles that of sweet hay, or that of milk; but to my nose it is more like the faint smell of certain apples, or rather of an apple chamber. Its taste is, more or less decidedly, sweet. Notwithstanding its limpid and aqueous appearance, diabetic urine is remarkably heavy.

It was long believed that the quantity of urea in diabetic urine was reduced much below the natural standard; and that the sugar was somehow formed at the expense of the urea. Dr. Prout, in his earlier researches, always detected a little, and but a little, of this peculiar principle. Later observations have shown, however, that the urea is not so scanty; nay that it is generally as abundant as in the urine of health, and sometimes even more so. The presence of

the sugar conceals the urea; interferes with the action of the ordinary tests of that substance. By certain modes of procedure, which I need not stop to describe, the urea may readily be discovered: and it is often found, I say, to be rather excessive than deficient. The usual saline matters belonging to healthy urine are present also in that of diabetic persons; and in the same *relative* proportions; but, as might be expected, their *absolute* amount, in a given quantity of the liquid, is very much diminished. In short, the only essential deviation from the standard chemical constitution of the urine is, that it holds in solution a quantity of sugar. This explains its peculiar odour, its sweetness, and perhaps its excessive quantity. It explains also another very characteristic property of diabetic urine; I mean its high specific gravity. In general, you know, the specific gravity of the urine is inversely proportional to the quantity secreted in a given time; the more copious and dilute it is, the lighter it is. But in diabetes, so strong is the saccharine impregnation that the specific gravity more than keeps pace with the increased quantity of the liquid secreted. The specific gravity of diabetic urine is always much higher than that of healthy urine.

The *quantity* of urine secreted and voided is sometimes enormous: far more than could be supplied by the quantity of fluid taken as drink, although that, as I shall presently explain, is excessive too. A healthy person passes from one to three or four pints of urine in the 24 hours. The quantity, as you well know, is liable to considerable variation: perhaps the average may safely be laid at about forty ounces. But patients in diabetes will void 40 *pints* in the same time. I have myself seen 26; 13 or 14 are not uncommon; and cases are recorded by writers of credit and veracity, in which 70 pints were passed daily. Nay, one Italian author declares that 200 pints have been discharged in that time.

The saccharine matter thus held in solution may be obtained in its solid form by evaporating the urine. I have seen large flat cakes of beautifully crystallized diabetic sugar. It differs somewhat from common sugar, the produce of the sugar cane; and approaches more nearly to the sugar of grapes. By rapid evaporation of the water a thick syrup is procured resembling treacle; but Dr. Mac Intyre, who has presented to our hospital-museum some very perfect specimens of this sugar, informs me that to get it well crystallized, the evaporation in a steam bath should be stopped while the urine is still of thin consistence. It may be quickly reduced to one half, perhaps, of its original quantity. Then it should be set aside, in shallow plates; and in the course

of ten days or a fortnight the sugar will be deposited in a regularly crystalline form.

The sugar is sometimes so abundant, that it undergoes a rude crystallization as the urine dries, wherever it happens to fall. A girl who was in St. Bartholomew's Hospital, while I was a student there, observed that if her water was accidentally sprinkled upon her black stuff shoes, every drop left a white powdery spot behind it. So also an aged patient under Dr. Mac Intyre's care expressed to him her alarm at finding that her black worsted stockings were covered with a white dust, from the same cause. I remember hearing from a diabetic patient in the Edinburgh Infirmary, that his attention was first drawn to his urine by the number of flies and wasps which its sweetness attracted to the chamber-pot.

This daily produce of sugar from the laboratory of the human body, is surely a very singular and surprising phenomenon. Sugar is not a constituent of healthy urine. Dr. Prout (who is more consulted on this subject than any one else, and whose experience in respect to it is commensurably great) says that he has never known saccharine matter to occur in the urine of any other animal than man. I once had a coach-horse which I supposed might have diabetes. He was a greedy feeder, and drank eagerly, yet he grew thinner and thinner; and wherever I had occasion to stop, there he invariably began to stale: so that I became thoroughly ashamed of his leaking. Dr. Prout was good enough to examine his urine for me. It contained no sugar, but its healthy properties were much changed: it had less than the natural quantity of hippuric acid, and more of earthy matters. The disease, he tells me, is known at the Veterinary College; whence specimens of such urine have been sent to him for inspection: but it is not true diabetes.

The unnaturally high specific gravity of diabetic urine is a constant quality; and you must attend to this, for it is almost always a faithful index, not only of the presence, but of the severity of the disorder. Dr. Prout places the specific gravity of healthy urine between 1015 and 1025, that of distilled water being represented by 1000. Different authors vary somewhat in their estimate of the natural standard; but we may be content to follow Dr. Prout. He says that the specific gravity of diabetic urine has been stated to vary from 1020 to 1050: that he has many times seen it higher than this, but very seldom so low. In fact it ranges generally between 1030 and 1060; and the average may be taken at 1040.

So much with reference to the quantity and qualities of the urine discharged in this complaint. It is attended, however, as you

may suppose, with other and important symptoms.

As so much fluid is evacuated from the body through this channel, it might be expected that the *other* channels for the excretion of liquid matters would be comparatively dry: and so they are. The skin is arid, harsh, and unperspirable. The patients tell you that they never sweat: that they cannot get into a perspiration. This is a very general symptom: yet in some few patients, especially as the fatal period of the complaint draws near, the surface readily becomes humid. Again, the bowels are mostly costive, and the *fæces* remarkably solid and free from moisture. The tongue is dry, parched, and sticky; sometimes unnaturally red and clean: and the waste of watery particles from the system seems to be felt and expressed by the inordinate thirst which the patients suffer. Their thirst is often insatiable. I remember one girl telling me that when she was debarred from an excess of water to drink, she would get up if she heard it raining in the night, and catch some of the descending drops to satisfy the tormenting sensation of thirst. And another patient, a very sensible fellow, informed me that, believing it could not be good for him to drink so much, and feeling no confidence in his own resolution to refrain, he was in the habit of betaking himself in the summer time to the fields and dry pastures, where no water was at hand to quench his strong desire for it. The appetite for food is often, but not always, equally keen: and the patients, especially those in the lower ranks of society, are apt to think, while they wonder at their weakness, that there cannot be much the matter with them, since they continue to eat and drink so famously.

Again, the enormous daily drain upon the system may be expected to cause various symptoms and sensations which may all be referred to debility and defective nutrition. Dr. Henry published a table, shewing the quantity of solid extract in every wine pint of urine of different specific gravities from 1020 to 1050. Taking 1040 as the average specific gravity, and ten pints as the average quantity of the urine discharged daily, the patient would in this manner lose, every 24 hours, 15 ounces 7 drachms—or more than a pound and a quarter—of solid materials.

We need not be surprised, therefore, at the hunger, the wasting, the hectic fever, the feeling of emptiness and sinking at the stomach, the debility, the chilly state of the body, and especially of the extremities, the aching and sense of weariness in the loins and legs, the aversion to exercise, the loss of virility; all of which symptoms are generally present. I may add, to complete the picture, some others, enumerated by Dr. Watt, and



confirmed by Dr. Prout, and consistent with my own experience of the disease. They are, uneasiness in the stomach after meals, flatulence and acid eructations, dimness of vision, redness of the whole interior of the mouth, sponginess of the gums, looseness of the teeth, and some degree of irritation and inflammatory redness about the external orifice of the urethra: these last are symptoms noticed in persons dying of inanition. Again, listlessness and depression of spirits, weakness and peevishness of temper: "the once vigorous mind becomes feeble, oblivious, and vacillating—the once amiable temper, fretful, suspicious, and intolerant." With all this there is a peculiar faint and unpleasant odour of the breath and person; an odour which Dr. Prout says is hay-like, which some call melleous, but which reminds me, as I said before respecting the urine, of the smell of a room in which apples have been kept. I have recognized the complaint, upon first entering the sick chamber, by this peculiar scent.

Diabetes is generally a chronic disorder, creeping on at first insidiously, and spreading itself, under judicious management, over many years. Yet it is sometimes fairly entitled to be called an acute disease; for it occasionally breaks out suddenly, is attended with much febrile disturbance, and runs a short course, uncontrolled by any treatment. One such instance I have seen. Much more frequently it proves fatal through the supervention of some organic mischief, such as debility is calculated to foster and develop. It often becomes associated in its progress with pulmonary disease, especially with tubercular phthisis. So common is this, that some persons have thought it universal. But it is not so. I have myself witnessed more than one or two dissections of persons dead of diabetes, whose lungs did not contain a single tubercle. Sometimes the disease terminates in incurable dropsy: and sometimes the patient is cut off suddenly, either by apoplexy, or by some peculiar affection of the stomach.

There is some kind of connexion between diabetes and certain affections of the skin, and of the subjacent reticular membrane. Dr. Prout remarks that it usually *follows* cutaneous complaints, but *accompanies or precedes* those which involve the cellular tissue. Persons have been known to lose chronic eruptions upon the supervention of diabetes. On the other hand, carbuncles and malignant boils are frequently the companions of that disorder.

The examination of the dead body throws little or no light upon the pathology of diabetes. We naturally look with interest to the kidneys. But we find nothing there to explain the symptoms noticed during life. What I have usually remarked has been a deep purplish red colour of the kidneys,

which were veined and vascular, but not otherwise altered in texture. Andral and others tell us that the kidneys are found hypertrophied in diabetes. But hypertrophy, and unnatural vascularity, are circumstances which we are not surprised at when we reflect upon the vastly increased quantity of work which the glands have been performing. We must regard both these unnatural conditions rather as being the consequence, than as being the cause, of the morbid flow of urine. In one instance, after sudden symptoms of gastritis, which followed the incautious potation of strong ale, I found the mucous membrane of the stomach distinctly inflamed, in its cardiac portion. I have found also the mesenteric glands diseased, converted almost entirely into bone. But neither of these changes are constant. They were purely accidental in those particular cases.

What, then, is the origin and source of this strange complaint? whereabouts in the body is the sugar formed? is it made, by the kidneys, from the blood? or is it made, from the food, by the stomach; and carried into the blood to be simply cast out through the urinary channels? or is it elaborated in some intermediate stage of what Dr. Prout has called the secondary assimilation; which includes the formative and the destructive processes that take place in the body subsequently to the act of sanguification? These questions, which are full of interest, have been much debated: and until very lately pathology was unequal to their solution. It was naturally thought that, if the sugar pre-existed in the blood, and was only withdrawn from it by the kidneys, it would be discoverable in the blood. Yet able chemists sought for it there in vain. Hence it was inferred, that by some new combination of its elements, saccharine matter was actually formed in the kidneys. The chemistry and the reasoning were both faulty. Sugar has, now, been detected in diabetic blood. It is detected with some difficulty, partly perhaps because its presence is masked by the albumen of the serum, but partly because its quantity is small; and its quantity is small because it is continually decanted out of the blood, as fast as it enters, and with it a profusion of water also, through the kidneys. In this respect the sugar and the urea are alike. They are both excretions which the blood is in haste to cast forth. It would seem also as if the sugar necessarily carried with it a large quantity of aqueous fluid from the blood, and was simply diuretic. When the amount of sugar eliminated is diminished, as by certain remedies it may be, the quantity of urine diminishes too.

Traces of sugar had, I believe, been found in the blood by some previous enquirers: but it is to Mr. M'Gregor, of Glasgow, that

we are indebted for the full exposition of this interesting fact. His researches, published last year (1837) in the *MEDICAL GAZETTE*, have thrown a new and strong light upon the pathology of diabetes.

By a peculiar process, he did, I say, that which many preceding chemists had failed to accomplish; he detected sugar in the serum of the blood of diabetic patients. The serum had a milky appearance he says; and I have seen that myself: its specific gravity was above the healthy standard. Having coagulated the serum by heat, he carefully dried it; then cut the dried mass into very small pieces, and boiled them in distilled water; and lastly, he evaporated the decoction to a certain point. To the liquid thus concentrated he added a portion of yeast, and the presence of sugar was manifested by the fermentation which ensued, and which lasted for several hours. Yeast, I should tell you, is a most delicate test of sugar, and will readily detect half a grain in two ounces of liquid.

Mr. M'Gregor went a step farther back. He obtained, by means of an emetic, the digested food from the stomachs of two men who had dined two or three hours before. One man was in health; the other had diabetes. In each case the food had been of the ordinary kind. Applying, after due preparation, the test of yeast, he found that the vomited matters fermented strongly; especially those from the diabetic patient.

Then he varied the experiment. Thinking that the sugar, in these cases, might have been introduced in the vegetable portion of the food, he adopted precautions to exclude that possible source of fallacy. He administered to a healthy man, and to a diabetic man, a vomit, and a purge; to clear out the alimentary canal. Then he fed them upon roast beef and water, and nothing else, for three days. Then, three or four hours after a meal, the contents of their stomachs were procured by the operation of the sulphate of zinc, as an emetic; and treated as in the former case. What the healthy man vomited did not ferment at all. What came from the diabetic patient fermented "pretty briskly."

The fault, then, we may safely conclude, lies in the *digestive* organs. Instead of healthy and nutritive chyle, saccharine matter is prepared by the stomach, and enters the circulation. That which should be converted into muscle, and fat, and bone, and nerve, and membrane, is hurried out of the system, as sugar, with the urine. Thus far we see our way with tolerable clearness. But *why* the stomach should cease to perform its accustomed chemistry upon the food, and even upon sugar itself as an article of food, we have not yet learned. That single important step is still wanting to the complete solution of the pathological problem.

I may mention that Mr. M'Gregor carried his enquiries farther still, and met with some curious results. He examined the saliva; the *feces*; and the sweat. He found sugar in the saliva. He could find none in the sweat. The *feces* of one patient, allowed to dry spontaneously, became covered, after the lapse of some time, by distinct crystals of sugar. And yeast having been administered to two patients, in ounce doses, after each meal, had soon to be discontinued, because the patients, to use their own expressions, felt as if they "were on the eve of being blown up."

We know but little about the *causes* of diabetes. It is not a very common disorder; and in those who become afflicted with it, there probably has existed a predisposition to it. Dr. Prout remarks that the complaint runs sometimes in families, and is inherited. I have had under my own observation, for some time past, two children, brother and sister, each affected with diabetes. The same author mentions among the predisposing causes, long-continued intemperance, and especially the immoderate use of spirits, severe evacuations, excessive labour joined with a poor accented diet. Distress and anxiety of mind are held also, and justly I think, to be among the predisposing causes. It occasionally seems to be produced, at once, by the operation of some exciting cause, such as exposure of the body to cold; or the drinking of large draughts of cold fluid while the person was hot and perspiring. Dr. Bardsley states that, in twelve instances of the disease which had fallen under his own notice, the patients attributed their ailment to one or the other of these two causes. Now these are common causes of disease: and that a predisposition does exist is probable from the fact, that where the exciting cause has acted on several individuals at the same time, one alone has become affected with diabetes. There is a narrative illustrating this, by Dr. Marsh, in the third volume of the *Dublin Hospital Reports*. A patient of his traced the apparent origin of his diabetes to exposure to wet, cold, and privation, at sea, while in imminent danger of shipwreck. Another of the crew fell ill of ague. Others escaped entirely, or had only common colds.

If the account which I have been obliged to give you concerning the intimate nature, and the causes, of this curious malady should appear unsatisfactory, so also, I fear, will what I have still to say respecting its cure. I dare not affirm that diabetes, although it seems a merely functional disorder, has ever been cured. Dr. Prout has known some few patients, two perhaps, or one, recover. Apparent recoveries—nay, apparent cures—are not very uncommon. And this it is of great importance to know. Remedies are

not useless because they fall short of their full scope. It is better to keep a man on the edge of a precipice, if you cannot pluck him away from it, than to let him fall over. And many diabetic patients are kept in this predicament of dangerous safety. There are certain remedies that exercise a strong controlling influence over some of the most prominent and troublesome of the symptoms; and that sometimes even restore the patient to a state which he mistakes for health; and which a medical man, unwarned of its fallacious character, might also mistake. The urine may recede within the limits of health. There may remain one morbid circumstance only, and that of a nature easily overlooked: indeed it is sure to escape observation if it be not especially looked for. I allude to the unnaturally high *specific gravity* of the urine. So long as the density of the urine continues permanently and decidedly above the healthy standard, there is no real security. The smallest disturbing cause—exposure to cold, an intemperate meal, unusual exertion and fatigue, sudden or strong mental emotion—may bring back all the symptoms in their former severity. If these and similar hurtful agencies can be averted, life may sometimes be prolonged, in much comfort, for many years.

There are three objects to be kept in view, in the treatment of every case of diabetes.

First, to restore the defective power of the digestive apparatus:

Secondly, to cut off, or restrict as much as possible, the supply of saccharine matter from without:

Thirdly, to mitigate or remove the most distressing symptoms.

If we could achieve the first of these objects, the other two would fall out of sight; for the disease, which is really a variety of dyspepsia, would be cured. But hitherto all the resources of our art have, in this respect, been baffled. Our main hope of ultimate success must lie in the regulation of the *ingesta*; whereby, also, the second indication is to be fulfilled. Some of the food is, in every case, carried to the proper account, or the patient would speedily die. If we can succeed in directing a sufficient amount of healthy nutriment to the organic tissues of the body, the draining away of any superfluous sugar will be borne well enough.

About the beginning of the present century, Dr. Rollo discovered and taught that a diet composed exclusively of animal matters had a signal effect in reducing the quantity and in diminishing the sweetness of diabetic urine. Mr. M'Gregor's experiments tell us why this is. Animal food furnishes but scantily the materials for the formation of sugar. "The saccharine alimentary principles are chiefly derived (says Dr. Prout)

from the vegetable kingdom, and indeed constitute what may be called, by way of distinction, *vegetable aliments*." If, then, we can exclude aliments of this kind, and confine the patient to animal food alone, we thus cut off the supply of the *materies morbi*; and without indeed curing the disorder, suspend its worst effects. But unluckily very few persons can long endure this mode of living. So far as they can endure it, they are comparatively safe. We are obliged to relax, in some degree, the rigour of our rule: and it is curious to observe how suddenly and decidedly the saccharine properties and the quantity of the urine are augmented, when, by stealth, or by permission, the patient adds to his meal the smallest portion of vegetable food—even a biscuit or two.

We must therefore contrive to vary the animal diet as well as we can; encouraging the patient by a free license to choose among the different kinds of meat, game, poultry, and eggs, in their diversified modes of preparation, and admitting into his bill of fare as small an admixture as possible of vegetable substances. Green garden-stuff, the oleracea, spinach, cabbage, celery, and the like, may be taken with less risk of increasing the saccharine matters in the system, than potatoes, and those other articles of vegetable diet which contain a notable proportion of sugar, gum, or starch. All kinds of fruit must be forbidden. You will seldom be able to debar your patients entirely from bread: none should be allowed but such as is well fermented, and somewhat stale; and even that as sparingly as may be.

It is also of much importance to admonish the patient, whose appetite is generally ravenous, against eating too large a quantity, even of animal food, at any one time. Not only is the digestion still further weakened and oppressed by an intemperate meal, but the patient's life may be put in peril by every such act of unwise indulgence. Of this I have witnessed one example, and have heard of several more.

The quantity of drink should likewise be limited. It may properly enough consist of animal broths: and these should be taken *tepid*, for they are then more likely to be taken in moderation. The patients must, however, and will, have something else, to slake their urgent thirst. I have found (acting upon a suggestion of the elder Dr. Latham) that distilled water, acidulated with phosphoric acid, appeases, more than most things, that painful sensation. The water of the Bristol Hot Wells, which contains carbonate of lime in solution, is praised by Dr. Prout for the same purpose.

Dr. Christison gives an important caution in respect to drinks; viz. that, when the thirst has already been much indulged, the quantity of liquid taken must not be greatly

reduced all at once. Sudden failure of the vital powers has not unfrequently ensued upon abrupt changes of that kind.

Very numerous are the remedies which have been tried, and which have been recommended, for this disorder. I shall notice those only of which I have had personal, and in some degree favourable, experience.

The first of these is *blood-letting*, which has been strongly advocated by Dr. Watt, of Glasgow, and by Dr. Satterley, formerly one of the physicians to the Middlesex Hospital. It is not a remedy which would naturally occur to one's mind as being likely to prove of service in such cases; but both the authors I have mentioned speak of it in terms of high commendation. They affirm that, under small and frequent bleedings, the strength increases; the clamminess of the mouth, and dryness of the skin, diminish; and the blood, by degrees, assumes the buffy coat. I have once seen the method of frequent blood-letting fairly put to the test. At first the patient did seem to be benefitted by it; but she ultimately died: and I am satisfied that her death was accelerated by one bleeding too many, or by too large an abstraction of blood at one time.

This measure has the best chance of being useful, when the malady is recent, and attended with febrile disturbance. In chronic cases, in old persons, and whenever the debility is already great, venesection can seldom be requisite or proper; although even then, as Dr. Prout remarks, it may be borne better than one might expect. Local bleeding is, however, of much service in relieving local uneasiness. Leeches may be applied to the epigastrium, if the patient has tenderness there, or complains of a sense of fulness or of burning in the stomach. Cupping to the loins, if they greatly ache.

*Opium* is a treasure to us in this disorder. It quiets the nervous irritability of the patient, allays many of his most distressing sensations, and restrains in a remarkable manner the morbid profluvium from the kidneys. But you must not suppose, from observing these favourable changes, that you are curing the disease by it. It appears to control the diuretic influence of the sugar in the blood; but it does not banish the sugar itself. And, as far as my experience goes, Dr. Prout is in the right when he states that moderate doses of opium generally suffice to check the excessive discharge. Five grains of Dover's powder, for example, three times a day, will do as much good, and on the other hand be productive of far less inconvenience, than larger quantities of that narcotic substance. The sudorific properties of this compound are thought to render it eligible: although it has seldom any apparent effect, in that way, in diabetes. If the ipecacuan which it contains should disagree

with the stomach, an equivalent quantity of any other preparation of opium may be substituted for it.

There is another remedial measure which has also, in some cases at least, a most beneficial influence on the condition of the patient; I mean forced perspiration—perspiration induced by the hot air bath. Of this I have seen some striking examples. A very well-marked case of diabetes came under my care in the Middlesex Hospital several years ago. A vapour, or hot air bath, had just then been constructed in the hospital, and I thought it a good opportunity for trying whether the suspended functions of the skin might not be restored, and the extravagant action of the kidneys perhaps corrected, by that powerful mode of exciting perspiration. I should tell you that other plans of treatment had already been put in force, with but partial advantage. It would occupy more time than I can now spare to enter upon the details of this case; but I will read to you the man's own statement, which he wrote down before he left the hospital, in evidence of the benefit he derived from the *sudatorium*.

"The urine" (these are his words) "is reduced more than one-half, and does not contain much sweetness, but sometimes tastes salt, with a mixture of bitter. My stools, which were dry, and like balls packed together, are now quite natural. The pains in my limbs are entirely removed. My spirits, which were very much depressed, are now revived, and cheerful. The unpleasant aching of my kidneys, of which I spoke little lest I should be cupped in the loins, is now removed; only I feel weak there. I am cured of the pain in my stomach, and the circuitous working of the wind in my bowels, which formed lumps in my belly as it passed, resembling those formed by the cramp. I have likewise got rid of the palpitation at my breast, which was accompanied with a sort of dread. My breathing is much improved; perspiration, in a great measure, restored; and my skin, which was dry, is now become moist. I sleep well at night, whereas I *could* not sleep more than two or three hours out of the twenty-four. My thirst, which was excessive, has ceased to be troublesome."

This man, who, in the statement I have just read, has so graphically described his own morbid sensations, and the relief from them which he had obtained, left the hospital thinking himself well: *but*, the specific gravity of his urine remained above 1030.

In about half a year afterwards, he went one evening to Hyde Park to see some fireworks, got wet feet, and began to cough. The diabetic symptoms returned more severely than ever; and he soon died. I found his lungs stuffed with tubercles.



In furtherance of the principle upon which the use of the hot bath is recommended, the other well-known methods of promoting the natural functions of the skin should be followed; friction, and more especially warm clothing.

*Steel* is sometimes singularly beneficial in repairing the strength, and enlivening the spirits; as indeed it is well known to be in other forms of disease attended with a copious and permanent drain upon the system, and with a diminution of red blood. Of course it may be combined with opium, or with any other medicine which the circumstances of the patient may require.

I need scarcely say that the bowels need attention. Not that active purgation is advisable, but simply their regulation. Castor oil, rhubarb, aloes, lenitive electuary, are more appropriate in these cases than the purgative salts, which are apt to be diuretic also.

There is one other drug from which I think I have seen the happiest effects. I mean the *creasote*. I first became acquainted with its virtue, from prescribing it, almost accidentally, until a consultation could be arranged with Dr. Prout, for a child, eight years old, in whom the disease was well marked, and who had been brought to London from the country for advice. She had been rapidly wasting away for ten weeks, was extremely feeble, soon tired, very thirsty, especially at night, and had (what was also new to her) an enormous appetite. She was passing from three pints to two quarts daily of pale urine, having a specific gravity greater than 1040. I desired that her diet should be as exclusively animal as she could bear, and that she should take one minim of *creasote*, suspended by means of mucilage in an ounce and a half of water, three times a day. Curiously enough, the child liked the tarry flavour of the medicine. Upon this plan, with gentle aperients occasionally to regulate her bowels, she has remained for upwards of a twelve-month. Her urine soon fell in quantity within the limits of health, and in density to about 1030. She has regained her lost flesh, strength, complexion, and spirits, and grown considerably. If in any case a complete cure may be hoped for, I think it may in her, as she attains the period of womanhood. The brother of this little girl has lately manifested unequivocal signs of the same complaint; and in him it appears to have been equally checked by the same method of treatment.

There were two points in this young lady's case which deserve a passing remark. As her urine diminished in quantity it began to deposit the lithates. This Dr. Prout considered a very promising earnest of a return to a better diathesis: and I find that in cases which have crept on insidiously from the first, he is accustomed to *date* the malady from

the time when lateritious sediments, previously common, disappeared from the water.

The other point was, that calomel always sickened this child, and aggravated all the diabetic symptoms. This is consistent with Dr. Prout's experience, who tells us that he has never seen mercury do good in diabetic disease; but on the contrary almost invariably do mischief. I would advise you to read his judicious observations upon the too common abuse of that mineral.

I am quite aware of a possible fallacy in the case I have been mentioning, with respect to the efficacy of the *creasote*. With the use of that drug was associated a stricter adherence to a purely animal diet; and it is impossible to estimate with precision the separate effects of these two remedial measures. I am, however, disposed to believe that the *creasote*, by its well-known preservative property, checks the conversion of the food into sugar. And I think it is a mistake to go on increasing the dose. To most stomachs it proves irritating and hurtful when pushed beyond a certain small amount. Dr. M'Intyre tells me that he has found the *creasote* very useful in diabetes. I must however acknowledge that, in common with others, I have sometimes been totally disappointed by it.

For many years of my professional life I had not met with an instance of what has been called *diabetes insipidus*: from which I infer the rarity of that disorder. I shall use the term *chronic diuresis* to express this affection.

Very recently a marked instance of such chronic diuresis has presented itself in the hospital. A boy, eleven years old, not unhealthy looking, but lean, was admitted there under my care. He was much troubled by thirst; and by frequent micturition, which, even in the night, disturbed him many times. His bowels were costive, he had a capricious appetite, and his skin was dry. He voided during the twenty-four hours several pints, seldom less than nine or ten, of simply dilute urine, of a faintly yellowish hue, and having the specific gravity of 1002. Sometimes, indeed, it was found to be scarcely heavier than distilled water. In other respects he appeared tolerably well. It was supposed that he had been affected in this way for about twelve months; his desire for drink having been the first symptom noticed.

During his residence, of many weeks, in the hospital, under my observation, I made trial of every plan and drug that I could think of, for repressing the unnatural flux of urine. Nothing did him any good: some things, I fear, by disturbing his stomach and bowels, did him some temporary harm. He went out much as he came in.



Although I can tell you neither upon what this disorder depends, nor how it may be remedied, I mention the case because it afforded me a proof that liquid may be absorbed into the body from the atmosphere; either by the external skin, or by the pulmonary mucous membrane, or by both these surfaces. Dr. Prout, to whom I showed both the urine and the patient, advised that, for a time, his supply of drink should be limited. Accordingly, very much to the poor boy's sorrow, he was put upon a daily allowance of a pint and a half. I have no doubt that my injunctions were strictly observed, both by himself and by the nurses. Nevertheless, without losing flesh or weight, he passed, during the corresponding twenty-four hours, ten pints and a half of urine.

I got evidence of the same fact in another way also; namely by weighing the boy at short intervals: although the experiment was not repeated so often as I wish it had been. I give you the results of one of these trials.

Immediately after he had emptied his bladder he was found to weigh 3 st. 8 lb. 0 oz. 3 dr. Three hours subsequently, having taken nothing in the interim, he weighed 3 st. 9 lb. 0 oz. 2 dr. Then he voided 16 oz. of urine: after which his weight was again 3 st. 8 lb. 0 oz. 3 dr. So that he must have imbibed about a pound of liquid in that brief space of time.

In this instance there was merely an excess in the aqueous ingredient of the urine; the solid matters were apparently there, in their due proportion to each other, but in a very small ratio to the water.

But the aqueous ingredient may be in excess, while the absolute quantity of *urea* is deficient. On the other hand, with an excess of the watery material, there may be

an excess also in the quantity of *urea* it contains.

Dr. Willis has distinguished these three varieties of chronic diuresis by the terms *hydruria*, *anazoturia*, and *azoturia*, respectively. Although I am no friend to the multiplication of technical names, I must tell you that the distinctions expressed by these terms are real, and of some importance. Anazoturia we shall find to be often symptomatic of a peculiar organic disease of the kidney, which I hope to describe in the next lecture.

Azoturia, which is accompanied by an unnaturally high specific gravity of the urine, is apt, on that account chiefly, to be mistaken for diabetes. As recoveries from it are not uncommon, it may be suspected that some of the boasted cures of diabetes were cures of this less serious disorder. In the one case, the yeast test detects the presence of sugar in the superabundant urine; in the other case it finds none.

CONTRIBUTIONS  
TO THE  
CHEMICAL PATHOLOGY OF SOME  
FORMS OF MORBID DIGESTION.

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(Continued from p. 397.)

IN the following table we have, at one view, the proportion of hydrochloric and of organic acids present in the vomited fluids from the patient whose case has been narrated.

Quantity of vomited fluid.	Date when vomited.	Quantity of real hydrochloric acid.		Quantity of free hydrochloric acid of the strength of the fluid acid of the pharmacopœia.	Quantity of potass required to neutralize the organic acids (acetic, lactic, butyric).
		Free.	Combined.		
3xx.	Oct. 28, 1840	10·652 gr.	15·228 gr.	32·9 gr.	3·0 gr.
3xx.	Nov. 12, 1840	7·108 gr.	18·272 gr.	22·0 gr.	6·7 gr.
3xx.	Nov. 17, 1840	1· gr.	22·320 gr.	3·09 gr.	16·9 gr.

From the chemical pathology of this case of scirrhus pylorus we may draw the following inductions:—

1. That the gastric secretions are persistently acid.
2. That they are always more or less coloured, and contain, in suspension, sebaceous particles.
3. That free hydrochloric exists, in considerable quantity, in the vomited fluids during the more irritative stage

of the disease, and gradually disappears as the powers of life sink.

4. That free organic acids are secreted, and are met with abundantly, in the vomited fluid; at first co-existing with the hydrochloric acid, and subsequently nearly replacing it. These acids are most probably lactic, acetic, and butyric.

These inductions are certainly interesting, and, if corroborated by the

examinations of other cases, cannot but be of some importance. Certainly they are supported by a less minute investigation I made in two other cases; but the extremely tedious nature of investigations of this kind proves an important barrier to their being multiplied by one observer.

Not only are these observations borne out by the phenomena presented by disease when actually involving the pylorus, but, so far as my own observations extend, equally apply to cases in which great pressure is excited on that portion of the stomach by organic mischief in a neighbouring organ. I shall content myself with citing a single case in support of this statement. I give it in the words of Mr. Walker, of St. John Street, in whose practice it occurred.

**CASE XIX. — Malignant Tubera of Liver pressing upon the Pylorus — Icterus — Death.**

"Mrs. L. æt. 30, fourteen months ago complained of violent pains in the regions of the stomach and liver, darting through to the back between the scapulæ. Vomitings of a bilious character soon made their appearance, and increased to that degree that only two dinner-meals have been retained in the stomach up to the present period, Aug. 23, 1841. There is little doubt but her illness has been partially produced by over anxiety in business, and other circumstances; denying food for some time, and passing sleepless nights. She has suffered through life from obstinate constipation, going a whole week without an evacuation. She has two children, the youngest of which is subject to constipation, but is, in other respects, healthy. Mrs. L.'s appearance, at the present time, is emaciated, and denotes considerable suffering, the pains over the stomach having been violent and throbbing, and only to be alleviated by opium, which, for some time past, has been administered. Aphthæ have made their appearance on the tongue, lips, and gums. She also complains of great thirst. This day, the 23d, she was seen by Dr. Golding Bird, when his attention was directed to the stomach and liver; and after examination of the contents of the stomach, and the region of the liver, he discovered some irregularities, with defined and hardened edges, and pro-

nounced the disease to be tubera of the liver, with, probably, scirrhus enlargement of the pyloric orifice of the stomach. A quantity of the brown fluid vomited was examined; it reddened litmus paper; and on filtering the same, and touching it with argent. nit. produced a flocculent precipitate, which was taken up on the addition of liq. ammonia. The urine was small in quantity, and of a yellowish-brown colour; fæces clay-coloured, and offensive. Dr. Bird ordered some aperient pills to keep up the action of the bowels; but they were rejected, when she took the Rose Mixture, with Epsom Salts, which partially acted. In the evening, complaining of feebleness in the bowels, I gave her Ol. Croton. gt. i. and repeated it in two hours, when she had rather a copious evacuation, retaining on the surface impressions of the small intestines.

25th.—Had a discharge of blood from the vagina, and, on examination, found os uteri dilated; and two hours after an embryo was expelled. None of the symptoms of pregnancy had been presented, owing, as I suppose, to being masked by the disease.

26th.—Vomitings of the same character, but not so violent; and she appears altogether more tranquil.

28th.—Vomitings considerable; and almost every thing she takes is rejected, with the exception of a little sherry and water.

29th.—Icterus appeared; complains of drowsiness, and pain in the head; rejects her medicine. Dr. Bird saw her, and ordered—

Argent. Nit. in gr.  $\frac{1}{4}$  doses ter die.

31st.—Vomitings worse, and producing great exhaustion; the only thing retained, and that only for a short period, is soda water and brandy, which she drinks in large quantities. Her tongue is now covered with aphthæ. Injections of beef-tea, and yolk of egg, were ordered by Dr. Bird.

Sept. 2d and 3d.—Gradually getting worse.

4th.—Dr. Golding Bird ordered the effervescing draughts, with ammonia; but they were rejected: in fact, any thing, as soon as it reaches the stomach, is immediately cast up.

5th.—Restless, with continued faintings throughout the day, with a quick fluttering pulse.

She died at a quarter past six o'clock the next morning."

*Post-mortem examination, 10 hours after death.*—*Head*: not examined. *Chest*: healthy. *Abdomen*: the irregularities felt during life on the surface of the liver were found to be made up of two large orange-coloured tubera, each the size of an egg, and projecting above the convex surface of the organ. The fundus of the gall-bladder projected considerably. The viscus itself was distended with black bile, holding in suspension a carbonaceous powder. One large tube pressed on the pyloric end of the stomach, and so interfered with the contents of Glisson's capsule as to prevent food passing through the former, and bile finding its way through the ducts. On cutting into the liver, the bile-ducts were everywhere distended, and great venous congestion existed. Stomach much distended: its pyloric extremity thickened, and so pressed upon by the tubera as nearly to obstruct the passage of a fluid through it. The ovaria contained some irregular yellow granular bodies, resembling those found in the liver.

*Examination of the fluid vomited on August 23, 1841.*—The vomited fluid exceeded a quart in bulk. It was of the consistence of gruel, and possessed a faintly acid odour. When strained through a cloth, a grey clay-like pul-taceous mass was separated from the pale-brown fluid portion. The latter passed through a paper filter with readiness, and then presented the colour of pale ale.

1. An ounce of the filtered fluid was distilled until five drachms had passed over; the remainder, evaporated to dryness, left a very acid brown extract.

2. By repose, a semi-crystalline fatty pellicle concreted on the surface of the distilled fluid, closely resembling that formed in the specimens obtained from the last case.

4. The distilled fluid actively red-dened deep-blue litmus paper, and did not become opaque on the addition of nitrate of silver. The f3v. required four minims of liquor potassæ for saturation. Evaporated to dryness, after

being thus saturated, a crystalline yellowish residue was left, which, on the addition of a drop of sulphuric acid, effervesced violently, and evolved a penetrating odour of acetic and butyric acids.

5. An ounce of the fresh vomited fluid required thirty-two minims of liquor potassæ for saturation.

6. An ounce of the fluid, evaporated and incinerated, precipitated from nitrate of silver four grains of chloride; and after neutralization with potass (A. 7, B. 4), the same quantity yielded 4·48 grains.

From these experiments it appears that each pint (3xx.) of the vomited fluid required rather more than 3xss. of liquor potassæ, equal to about thirty-six grains of the free alkali, for the saturation of the uncombined acid; and of this enough was volatilized, at a low temperature (1), to neutralize rather more than a drachm of the alkaline solution.

The quantity of free and combined hydrochloric acid, being calculated from the quantity of chloride of silver (6) precipitated by a solution of the ash obtained from each ounce of fluid before and after neutralization, we find that in each pint of 3xx. there existed—

Free and combined hydrochloric acid	22·61 gr.
Combined hydrochloric acid	20·30 gr.
<hr/>	
Leaving, of the free acid, only	2·31 gr.
equal to very nearly 7·5 grains of the fluid acid of the shops.	

As the quantity of hydrochloric acid in 3xx. of vomited fluid (2·31 grs.) was only sufficient to neutralize 3 grains of potass, it follows that enough of some acid, destructible by heat, to saturate 33 grs. of the alkali, must have been present. This acid, in all probability, consisted of acetic, lactic, and butyric. We have positive evidence of the first and last existing in the distilled fluid; and the second we know to be a tolerably constant ingredient in animal secretions generally.

The following table shews the relative proportions of free and combined acid at one view:—

Quantity of vomited fluid.	Date when vomited.	Quantity of real hydrochloric acid.		Quantity of free hydrochloric acid in grs. of acid of the shops.	Quantity of potass required to neutralize the organic acids.
		Free.	Combined.		
3xx.	Aug. 23, 1841.	2·31 grs.	20·30 grs.	7·5 grs.	33 grs.

In this case, as well as in that of scirrhus deposit in the pylorus itself, we find an enormous quantity of an organic acid secreted. It certainly would appear that *pari passu* with the extension of the disease, the hydrochloric acid disappears, and the organic acids increase.

To obtain satisfactory information regarding the positive increase of the organic acids in disease, we must have some data derived from the examination of healthy secretions wherewith to compare them. This must probably for some time be a desideratum. The only approach to definite information I can give on this head is derived from

an examination of the fluid matters vomited during digestion after the exhibition of an emetic of sulphate of zinc. The person was a young man under my care, at the Finsbury Dispensary, for a trifling rheumatic ailment, being otherwise in perfect health. He took ℞j. Zinci Sulphas half an hour after a tolerably hearty dinner; and the vomited mass was thrown on a flannel strainer: a scarcely-coloured acid fluid passed through, and the following is the result of my examination, which, however, from being made on a single case, can scarcely be regarded as even approaching to satisfactory information:—

Quantity of vomited fluid.	Date when vomited.	Quantity of real hydrochloric acid.		Quantity of free acid of the strength of the pharmaceutic preparation.	Quantity of potass required to neutralize the organic acids.
		Free.	Combined.		
3xx.	Nov. 17, 1840.	3.45 grs.	5.07 grs.	12. grs.	2.43 grs.

In this case we find the ratio of hydrochloric to organic acids to be as 1 to 1.4; whilst, in the preceding one, it was ten times more, or as 1 to 14—a disproportion so enormous, that, making all allowance for errors of observation, we can scarcely help referring it to the effect of diseased action.

I only regret, in thus bringing to a close the remarks I have taken the opportunity of making on the chemical characters of vomited fluids in some

gastric affections, that the amount of information I have to offer has been so scanty. For this the very tedious and laborious character of investigations of this kind must plead an apology; and I trust this important subject will be further elucidated by those who have more time to devote to the task than falls to my lot.

14, Myddleton Square,  
May 25, 1842.

## ON ARTIFICIAL CLIMATES.

By JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 222.]

### ON THE ATMOSPHERIC TREATMENT OF CHRONIC DISEASES OF THE CHEST.

#### *On the Respirator.*

THE above is an explanation, sufficiently full, of that portion of the physical principle of the Respirator which relates to its power of transferring heat in the most advantageous manner between currents of air which are passing it, not simultaneously but alternately, and in opposite directions. It has been shown that a peculiar construction is requisite for effecting this, consisting of a number of distinct depositories of warmth of different

grades of temperature, progressing from the outermost, which is nearly at the temperature of the air, to the innermost, which may be given nearly the temperature of the breath. It will have been seen, then, that in order to command the full action of the principle, not only is the quickly conducting power of metal necessary, and an extreme subdivision of it and of the air subjected to its influence, but a system also, or series of depositories of heat, without which the effect would be very inferior.

It will here be proper to notice the different action of the Respirator, in its conducting capacity, from one or two articles with which it is often confounded.

From want of attention, persons abundantly qualified to discern between the two have often spoken of it as a

modification only of the action of the woollen wrapper commonly worn over the mouth, and named a comforter. A little attention will suffice to render it manifest that the woollen wrapper and the Respirator not only do not act upon the same principle, but that they are at opposite extremes in their action.

To act most perfectly for keeping off cold from the surface of the body, a substance should be a most perfect non-conductor of heat. That wool is such we can little doubt, when we consider that unlimited knowledge, skill, and power, have clothed the sheep with its fleece. Hence, upon trial, we find that the fibre of wool has the least possible power of transferring warmth. And in the case of a fleece, or of clothing, the interstices unoccupied by the fibre detain in them air, which, when thus fixed, is equally slow to transfer heat. Such a material on the body is admirably qualified to keep in the animal warmth. In the use of wool for clothing man was following an example which would guard him from the possibility of error; but when he employs the materials of nature unguided by a Divine example, much caution and study of the laws of their action are requisite to preserve him from a confused misapplication of them. Thus the endeavour to protect the lungs by wrapping over the mouth that which gave comfort to the body, though an inviting measure, was an entire desertion of the Great Example, and altogether erroneous.

In the case of the lungs, the warmth to be preserved is not travelling off by itself, but is combined with the impure breath, which ought all to be freely voided. If we breathe over woollen fibre, this substance, true to the property implanted in it, will not conduct or transfer any appreciable quantity of warmth from our breath; and when we next inhale cold air, the wool will have no warmth to give it; and if it had, it would give none, being a non-conductor. Hence, if we breathe backwards and forwards over wool, at every out-breathing all the warmth will be lost, and at every in-breathing cold untempered air will enter the throat, in the same manner as when the face is uncovered. To produce any effect, it is necessary to make the woollen wrapper very bulky and spongy. Though it still fails to conduct any heat, its

bulk enables it to detain a considerable quantity of the breath itself, especially as the breath can spread to the right and left over the cheeks in breathing out. At the next breathing in, this body of warm impure air is mixed up with the cold pure air, and tempers it in a trifling degree; but then this is at the expense of its purity. Hence the oppression felt, and the unwholesome action of any wrappers which are so bulky as to produce any warming effect on the breath; and even with this unwholesome contingency, the effect is too trifling to be relied on by the pulmonary invalid.

The property of non-conduction with which wool is endowed by Infinite Wisdom, which never intended it for a Respirator, may assure us that the action of the woollen wrapper is no other than the above, small as that warming action is. Nearly the same may be said of all fibrous matter of animal or vegetable origin. Non-conduction is their characteristic, while the Respirator requires the most perfect conducting power attainable in its materials, aided by the peculiar construction described.

Another remark not unfrequently made is, that the Respirator acts upon the principle of the safety-lamp of Sir Humphry Davy. This is by no means correct. Their only points of resemblance are two. One they have in common with a kettle, or boiler, or any other instance of conduction through the medium of metal. The other point of resemblance is, that in both the conduction is of the nature which may be named *interstitial*. The fluid and the metal are, as it were, mixed up together, the particles throughout the interstices of the one acting upon those of the other; for effecting which the metal is given the form of fine wire. But the resemblance goes no farther. In the safety-lamp, the conduction is continuous, as in an instance formerly noticed, or as in the case of a boiler. The upper portion of the gauze conducts heat without intermission from the hot air going out: it is a case of uninterrupted continuous conduction, and wire, in that case, is only a roadway for the heat, not a storehouse of it. And as the heat of the inflamed gas in the lamp is far higher than that of the outer air, comparatively coarse means suffice to extinguish the flame.



But in the respirator, the conduction, as has been explained, requires to be of the depositive or storehouse kind. In this respect it rather corresponds with the heater of an urn, or the iron used in soldering; which are depositories of heat received in a fire, and afterwards yielded to other matter as we may wish. With respect to the gradative character of the conduction of the Respirator, I do not know of any other instance in which it is employed. This provision, embodied in the finest workmanship, is necessary for recovering the comparatively small warmth of the breath, and transferring it to a medium so much nearer in temperature to it than in the case of the safety lamp. Hence I found the ordinary resources of the finest manufactures in metal of much too coarse a nature to give the perfect effect I desired to a philosophical principle which was of so delicate a nature as to be in danger of slipping, as it were, through the fingers.

Warming the air inhaled is not the only action performed by the instrument. Were it so, it would have been very imperfect. It may be well understood, from all the foregoing remarks, that I should have felt averse to raising air, already dry perhaps at the freezing point, up to 70° in an instant, without any provision for moistening it. While reflecting upon the subject, it became evident, that a deposition of moisture condensed on the outgoing breath ought to be found on the wires; and, on trial, the gaining of so important a point proved very encouraging; for it was also obvious that this moisture would be, in part at least, dissolved by the entering current, which would thus be given humidity as well as warmth; the two actions falling together in happy accordance. The cases which have come before my notice, in which the presence of this humidity has been of the greatest benefit, have been so numerous, and its action so manifest, as, by the irresistible power of fact, to negative any counter-hypothesis which, grounded upon some partial view or loose analogy, might be raised against offering moisture with warmth continually to the membrane while in an irritable state. There can be no question, as has been noticed already, almost too often, in the preceding

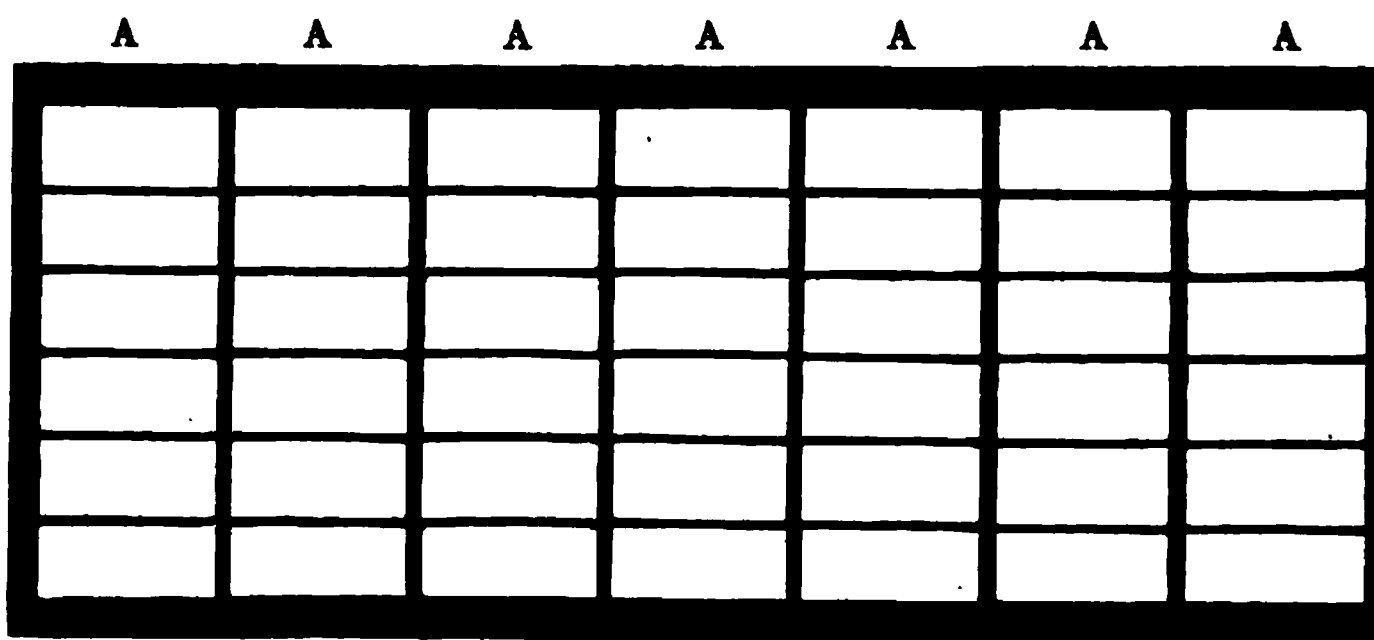
pages, that keeping *the whole body* in a similar atmosphere would be as improper as it would be a practice altogether different from the other in its principle and action.

On this last consideration rests the seventh indication enumerated in my last paper—that of favouring the action of the skin by not overloading it with clothing: for when the pulmonary membrane is thus allowed to diminish the quantity of the exhalation which it can ill supply while irritable, it may, in many cases, be well to favour a vicarious action by the skin; and it is undeniably desirable to maintain active circulation in the surface. Now we find, as a part of the physiological action of the Respirator, that it must, from its principle, possess, in a powerful degree, the property of diffusing warmth over the whole system. The quantity of heat lost by the lungs in respiration, partly in raising a cold air up to the blood heat, and in part in the form of latent heat carried off in the vapour exhaled, repeated as the act is so quickly and constantly, is doubtless very large. I shall not here occupy time by relating attempts to estimate it; but the amount is such as abundantly to account for the chilly state of the body generally, where the lungs are diseased or enfeebled. Now the quantity of the warmth thus carried off is so much less, when the Respirator is worn, that the effect is not felt in the chest alone, but gradually, in a greater or less degree, over the whole body. That this collateral result would flow from the principle was too manifest to escape observation, and it was therefore noticed in the little essay I printed before it became established by trial. Very soon afterwards I met with persons describing of their own accord this general warming effect as a source of comfort; and what is curious, several remarked that it answered the purpose of a great coat; thus in very terms showing its fulfilment of the seventh indication. In my own person, when suffering from a bronchial affection, I have experienced this at times, when, without the instrument, not only was distress felt in the chest, but the limbs could not be kept warm out of doors. I am now acquainted with many similar and more striking cases. In that of one medical gentleman the instrument is worn more on account of this power

of diffusing warmth over the body, than for any immediate need of protection by the lungs.

Omitting all minor points, there remain to be offered a few observations upon the investive parts of the instrument. These, for the purpose of guarding the metallic storehouse from a dissipation of the warmth, ought to be of material very slow to conduct heat. Soft leather, on this account, and from its being the most flexible and pleasant material to apply to the face, was selected; and I have not had any reason, from experience, to direct the employment of any other. To one point more especially I would call the attention both of wearers and of those who recommend the use of the Respirator; namely, the keeping the leathern folds, or tucks, which apply themselves to the lips, in a sufficiently elevated state, by means of drawing-strings with which they are provided, to prevent the lips from pressing against the metal-work. When this takes place, the area of the instrument which can supply the draught equals only the orifice of the mouth; for the lips form a kind of valve round the surface they touch. On an average of mouths three quarters of the surface would be thus excluded from acting. Hence in these cases, which are of frequent occurrence, the freedom with which the air is drawn, as well as the

warming effect, is materially lessened. It may be interesting to the professional reader to consider the arrangement for making the area of the surface of the instrument bear a determined relation to the area of the orifice of the human glottis, in its usual partially open state, or of the narrowest part of the trachea. I have taken the value of this area, or free-way of the air-passage in the human male adult, at twenty-four square sixteenths of an inch, or equal to a parallelogram half an inch long by three-sixteenths wide (A A A, &c.) This is perhaps equal to the largest tracheæ. An orifice of that size, if not lengthened out into a tube, would therefore supply air freely to the lungs, as in the case of the contracted portion of unobstructed nostrils. Now, I suppose, in the case of the Respirator, the multitudinous subdivision of the air current by the wire-works may increase the resistance to the motion of the currents twenty times, requiring twenty of such parallelograms to supply the windwipe readily. But as the wires themselves take up one-third of the whole surface, thirty have to be allowed. In order to render the passage abundantly free, I increased the number one-third more, or to forty, to which, to preserve the rectangular form, I added two, making in all forty-two of these parallelograms or compartments, in the man's Respirator. For fe-



males I have reduced the area about one-fourth, and have given them thirty compartments; and to children (supposed under twelve years of age) twenty compartments. Experience seems to justify these provisions, where attention is paid to the point above insisted on—that of keeping the lips off the metal work; but I would be happy to attend to the suggestions or corrections of my esti-

mate by any more able anatomist and pneumatician.

The complete Respirator, then, is an instrument consisting of a series of highly conducting depositories of warmth, invested by non-conducting parietes of leather, passing next the face into soft cushions, which apply themselves closely to the lips and cheeks. I do not here occupy the reader with

the minor details of the arrangements for rendering the same instrument, by flexibility and other provisions, adaptable to all varieties of feature.

*On the Protective and Restorative Effects of the Respirator.*

The limit I have set to the space occupied by the various subjects discussed in these papers, renders the present account necessarily imperfect, I do not, therefore, here undertake, in considering its medical action, to speak of the various affections of the respiratory organs separately, in which the Respirator has been, or may be employed with benefit, but I shall confine my remaining remarks to a general statement of facts of experience. The preceding matter, which has consisted chiefly of arguments and views rested upon principles in physiology and medicine, however stable in theory, would fail of obtaining the assent of many persons, unless it could be shown that sufficient *trial* had established its truth. Nor would a few cases suffice; for it is to be regretted that where the speculator is himself the observer, in medical cases which put his views to a trial, a bias in favour of the offspring of his own mind is liable to mislead him, and to cause a person, not by any means indifferent to the high demands of truth, to find cases suitable to his views. We have instances of opposite hypotheses, thus supported, at the same moment by medical cases.

As objections have been raised to the principle of the Respirator, and to the medical views upon which its use is rested, and as even to this day, and within the profession, grave, but far-fetched arguments are to be heard against it (some having to go to the tropics and the polar regions for them), instead of troubling the reader by pointing to the loose foundation on which they are rested, I shall state a summary of facts, not of my own experience only, but also of many hundreds related to me by professional and other observers, upon an experience of five years, in this and other countries. Upon the grounds I am in possession of, I consider the number of regular wearers, in this country, of the Respirator in the winter to range at present between fifteen and twenty thousand. Though this number, owing to the great prevalence of disorders of the organs

of respiration, may not exceed one-fiftieth of all the cases of a nature to be benefited by its use, it is large enough to afford an ample field of experience.

My opportunities of observing the effects of the Respirator, though not equal in extent to what, by a more frequent contact with the public, might have been commanded, have nevertheless been considerable.

Were the benefit in each individual case of small extent, when multiplied into so many thousands, the collective amount of its utility to the public would be still considerable. Its effects, however, have extended far beyond this. Did their amount confer merit upon the inventor, I should prefer leaving to some other person the duty of detailing them as evidence. But I do not claim merit on this ground. Had there been only one, instead of a million cases to which it was suitable, the line of thought ending in the physical portion of the invention, and any aptitude for construction giving rise to the mechanical part of it, would have been just the same, though, in that case, the resulting instrument would have been useless to all but that one individual. The following, then, is a summary of the effects, collected partly from my own observation, but chiefly from that of others, during a period of five years:—

After having invited communications from wearers of the Respirator at all times, I find the proportion of cases of disappointment to be very small, and chiefly confined to two kinds; first, where, as before noticed, the lips are brought in contact with the metal, thus diminishing the free-way of the instrument, and, to some extent, the freedom of respiration; and, secondly, where Respirators of more warming power than was suited to the feelings of the wearers, or the temperature of the weather, had been employed. It is obvious that a power suited to a cold winter day must be too great for spring weather; for which the Respirator of lowest power is provided.

With these and a few other exceptions, I may almost affirm that the instrument has been universally beneficial, though, in the numerous cases, in which other than atmospheric causes are the chief sources of distress, the benefit is necessarily limited: yet any benefit, obtained without the least in-

jury or uneasiness to counter-balance it, is a gain of which no considerate person will be insensible.

In its second degree of benefit, it has lessened the severity of cough by day, as well as by night, where it has not secured complete rest.

In its next, by their enjoyment of air, exercise, freedom of respiration, and of the circulation through the flow of warmth to the extremities, and by the consequent improvement of their spirits, it has qualified persons for the performance of duties they had long been compelled to lay aside. When it is productive of this degree of benefit, we are brought amongst cases of much interest in the history of its action. In many, to these advantages by day, it has added the important effect of giving complete rest at night. Persons who were strangers to any period of unbroken sleep, enjoy a whole night's rest of the most perfect kind.

I have seen a person bent down with asthmatic distress, emaciated, and weak in body, and in mind dejected by suffering, and by the cares of a family, whom every year he was becoming less able to provide for, by the aid of the Respirator alone brought to the following state:—His attitude has become more erect; he has acquired more flesh than he had had for many years; his ease, at night, as well as by day, has been such as he never hoped to enjoy; his time has been quite restored to his family; and his anxieties have been all removed.

No cases are more striking than of those asthmatics, whose local symptoms depend much on the temperament of the atmosphere, especially of those who do not presume upon the first relief they get, and relax from the caution in diet which they had before been compelled to exercise.

Others there are, who had to incur serious injury to their affairs, and painful separation from their families for several successive winters, by leaving England, who, under the protection of the Respirator, have remained for some years in the bosom of their families. I know of cases of this kind where the improvement of health has been so considerable, that the parties are now actively engaged in business. I am acquainted with the cases of medical men, some in large practice, who have resumed labours valuable to the com-

munity around, and to their families, having been thus not only saved from exile, but restored also to the active duties of their profession. I know likewise men in trade incurably ill with pulmonary disease, which was proceeding apace to a fatal termination through repeated attacks, who have remained for some winters apparently in a stationary condition, as to their disease, and become so far improved in strength, as to be restored to the duties of life. Cases are frequently reported to me of persons who had been entirely confined within doors, for many winters, through bronchial or laryngeal irritability—some even to two or three apartments—who, by so careful a use of the instrument as to guard against any recurrence of atmospheric irritation, have not only been rendered independent of the seasons, and able at all times to follow their occupations, but who have, in many instances, been so thoroughly restored, as even in the winter no longer to need the instrument. The pulmonary membrane having by degrees entirely recovered its tone, they have become no more susceptible of ordinary atmospheric vicissitudes than their neighbours. These instances prove that so far from increasing a susceptibility to cold, the effect of the instrument, in the case of persons at all delicate, is the very opposite to that which might be supposed, and which has, indeed, been often apprehended.

[To be continued.]

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#### POSTSCRIPT TO MR. MAYO'S LETTER IN LAST WEEK'S MEDICAL GAZETTE.

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THE diagnosis which I had formed of the popliteal tumor described in my letter of last week, I was afraid, on reconsideration, might appear too finely drawn; and the reader, I thought, would at best hardly be inclined to go further with me than to suppose the case to be some one or other form of malignant disease of bone: when, by an odd coincidence, I found the very next case, given in the same number of the MEDICAL GAZETTE, to be similar in its features to that which I had described, and to have proved on examination the very disease (being a most rare one)

which I had inclined to surmise the other to be.

The second case, to which I refer, is narrated by Mr. Henry Hargreaves, of Burnley; and his exceedingly clear description enables me to identify the popliteal tumor in his patient, as one of those which, in common I believe with many other surgeons, I have been used to denominate osteo-sarcoma; and specifically, gelatinous osteo-sarcoma. The greater rapidity of the disease in his case is of no moment as to the identity; so variable is the rate of progress in malignant disease, and of those tumors especially, a large portion of the contents of which is liquid.

To reconcile the reader to view the immense tumor described by Mr. Hargreaves as a growth from the femur, notwithstanding the small extent to which that bone is described as having been implicated with it, I may mention the following case which occurred under Dr. Hawkins's care in the Middlesex Hospital. The patient was a middle-aged man, the whole of the right side of the front of whose abdomen was occupied by a firm tumor externally convex, following the shape of the body, visibly projecting and seated superficially. It proved to be a vast flattish mass, from two to three inches in thickness, of cartilaginous osteo-sarcoma, the place of which was between the peritoneum and abdominal muscles. It had grown from, and adhered by a narrow peduncle to, the fore-part of the fossa of the ilium. If the case had been admitted at a much earlier period, the resection of the tumor, with part of the ala of the ilium, would have formed a brilliant and perhaps permanently successful operation.

Let me take the present opportunity of suggesting, in place both of Mr. Hargreaves's nomenclature and my own, the term cysto-chondroid exostosis, for the disease he has given an instance of. Then, all the varieties of *malignant tumor of bone* which I have seen, and can discriminate from one another, I would comprise in the following arrangement, to supersede that offered in my *Outlines of Pathology* formerly:—

*Exostosis maligna*; malignant tumor originating in the cancelli, or from the external surface of bone.

1. *E. chondroides*.

- a. Simple chondroid.
- b. Cysto-chondroid.

2. *E. encephaloïdes*.

- a. Simple encephaloïd.
- b. Hemato-encephaloïd.
- c. Melano-encephaloïd.
- d. Fibro-encephaloïd.

I remember indeed amputating the leg for malignant disease of the fibula in a young man, and a large diseased breast in a young woman; in both of which cases our first authority in the anatomy of malignant growths assured me the disease was not encephaloïd, but a different form of malignant tumor. But to myself the apparent structure of these tumors was indistinguishable from that of encephaloïd; and Mr. Tomes, who examined the fluid expressed from the mammary tumor, found in it the large granular corpuscles of a regular elliptical figure common in encephaloïd.

I need not add, that before performing amputation for supposed malignant disease, it is proper to cut into or puncture the tumor, so as to remove every shade of doubt as to its nature. This should be part of the proposed operation, and one to which the patient willingly assents, as affording a chance that *amputation* may yet prove unnecessary.

2, St. James's Place, June 4, 1842.

## MIDWIFERY STATISTICS.

*To the Editor of the Medical Gazette.*

SIR,

DR. Fleetwood Churchill, in his work on "The Theory and Practice of Midwifery," published a few weeks since, has entered rather deeply into the statistics of that branch of medicine; and, among other authorities, has introduced my father's name in a manner which I regard as most unfair.

My father inserted in his "Practical Observations" a number of cases, which he selected without any reference to their issue, whether favourable or otherwise, but solely for the purpose of illustrating some argument, or inculcating some particular mode of practice. With this view he generally chose the most dangerous or the fatal cases, as suiting his object the best. That he made a *selection* the following words from the prefaces to both his volumes clearly show: "I have selected such cases as appeared to me to bear particularly on the principal points of the text, or such



as possessed some striking singularity." —"The cases are numbered onward [from the first volume]; each is inserted for the purpose of exemplifying some particular fact, or of impressing the propriety of the practice recommended. I have not confined myself to the detail of such as had a fortunate termination; I have also inserted many which had an opposite result."

Dr. Churchill, therefore, should have known that the cases were selected; and he should have known also, that to take such as a sample of the general practice of any individual was most unjust towards him, and likely to lead to the most erroneous conclusions. Yet Dr. Churchill classes these *selected* cases of my father's in the same list with the cases of Dr. Joseph Clarke, Dr. Collins, and other practitioners, who have given to the profession copious tables, embracing the whole details of their public practice during a stated number of years. He sums them all up together into one grand total, divides them *en masse*, forms an average of deaths and other particulars, and then founds arguments on the product which he has thus obtained. The consequence of this mode of proceeding is, that Dr. Churchill's tables appear to shew my father's practice in a very unfavourable light when compared with his own and that of other gentlemen.

That I may not be supposed to complain without reason, I shall trouble your readers with the following extract from Dr. Churchill's tables, confining myself to the names of Drs. Collins, Churchill, and my father.

Flooding cases.	Mothers lost.	Children lost.
Collins . . . 131	12	17
Ramsbotham. 69	30	13
Churchill . . 25	0	0

Forceps cases.	Mothers lost.	Children lost.
Ramsbotham. 11	3	5
Churchill . . 9	0	0

Convulsions.	Mothers lost.
Collins . . . 30	5
Ramsbotham . . 26	10
Churchill . . . 2	0

Retained placenta.	Mothers lost.
Collins . . . 66	6
Ramsbotham . . 27	10

Breech presentations.	Children lost.
Collins . . . 242	73
Ramsbotham . . 14	7
Churchill . . . 35	14

Presentation of superior extremities.	Mothers lost.	Children lost.
Collins . . . 40	4	20
Ramsbotham. 27	6	18
Churchill . . 9	0	5

Craniotomy cases.	Mothers lost.
Collins . . . 79	15
Ramsbotham . . 34	5
Churchill . . . 11	1

Ruptured uterus and vagina.	Mothers lost.
Collins . . . 34	32
Ramsbotham . . 10	10

I will not fatigue the reader by multiplying quotations; the above extracts are more than sufficient to prove my position. Dr. Churchill has also included in his lists the well-known cases of Drs. Giffard, Smellie, Perfect, and others, who, like my father, published selected cases, and never gave to the world an average of their practice in general. It is evident that data drawn from such sources must be very far from correct; and it will be readily granted that statistics are worth nothing unless they approach pretty nearly to the truth. It appears to me, therefore, that the profession should be put on their guard against the system of reasoning which Dr. Churchill has followed. Any calculation, indeed, that is admitted on this subject, should be confined to the records of those who have themselves formed an average of casualties from their *whole* practice, and should not embrace cases selected for an especial object.

But not only is the deceptive system of calculation which Dr. Churchill has adopted unjust to the individual, inasmuch as it would disseminate the idea that his particular mode of managing difficult cases is faulty; it is equally, and in the same degree, injurious to the character of British practitioners at large; because it tends to swell the number of fatal cases, and must therefore dispose foreigners to form a very unfavourable estimate of British skill.

Dr. Churchill, moreover, is not even correct as to his elementary premises. He numbers my father's forceps cases at eleven; and he signifies that of the women three died. Now my father has recorded twelve cases in which he delivered by means of the forceps; and four of these women died. It should be stated, however, at the same time, that one patient was delivered after the bladder had burst, another under

accidental hæmorrhage to a fearful extent, and two under convulsions; that two of these cases were twin—in one both children were extracted by the forceps; in the other the second child. Such cases, especially the four first, should not be classed as common forceps cases. Similar observations would also apply to his craniotomy cases.

Dr. Churchill has put down my father's published cases of ruptured uterus and vagina at ten; and he states that all the women died. In the very volume from which the Doctor has quoted, he will find thirteen cases of ruptured uterus, besides two of lacerated vagina, detailed by my father at length; and he might have read that three of the women recovered. These three cases of recovery are the more interesting, and would be the more likely to make a strong impression on the mind of the careful enquirer, since every one of the women subsequently became pregnant. How Dr. Churchill could have overlooked such unusual cases is to me beyond the power of explaining.

I have induced my father to make out a summary of the particulars relative to those cases of lingering labour in which he has employed the forceps since January 1st, 1820. This will embrace a period of nearly twenty years of extensive and active employment. There can be no mistake in these memoranda; as, from the date I have mentioned, he has kept an account of every obstetric case in which he has been concerned; and he was in the habit of transferring his remarks to paper as soon as possible after the occurrence. I find the number of cases altogether to be 104: four only of these women died; fifty-four children were born living; thirty-six were still-born; and in fourteen cases there is, unfortunately, no mention made of the child's state.

I hope to persuade my father to publish similar accounts of the other instrumental and difficult cases he has met with, principally to prevent the result of his practice being misrepresented in the way which Dr. Churchill has done.—I am, sir,

Your obedient Servant,

FRANCIS H. RAMSBOTHAM.

14, New Broad Street,  
June 4th, 1842.

P.S. I should perhaps mention, that all the forceps cases detailed by my father in his "Practical Observations," from which Dr. Churchill has taken his average, except three, occurred before the year 1820.

#### ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

*The Anatomist's Vade Mecum. A System of Human Anatomy.* By ERASMUS WILSON. With 167 Illustrations, by BAGG. Second edition, 12mo. pp. 595. London: Churchill. 1842.

As a satisfactory proof that the praise we bestowed on the first edition of this work was not unmerited, we may observe that it has been equally well thought of in foreign countries. This *Vade Mecum* has been already reprinted in the United States of America: it is at this moment undergoing translation in Berlin, and we know that overtures have been made for its publication in France.

We have carefully looked over this second edition, and find it more perfect than its predecessor in several respects. A fuller description is given of some parts which were only scantily treated in the first edition. The investigations of Mr. Bowman, of King's College, on the minute anatomy of muscular fibre; of Mr. Nasmyth, on the development of the epithelium; and of Mr. Curling, of the London Hospital, on the descent of the testis in the foetus, are included under their separate sections. Mr. Wilson has also himself contributed some original researches on the minute structure of bone. The principal additions to the present edition are contained in the chapters on the ligaments, muscles, nervous system, organs of sense, and viscera. The very beautiful and really speaking wood-cut illustrations are also augmented in number. In every respect, this work, as an anatomical guide for the student who seeks to obtain knowledge which he has not yet acquired, and for the practitioner who wishes to keep up that which he finds gradually fading from his mind, merits our warmest and most decided praise.

# MEDICAL GAZETTE.

Friday, June 10, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## THE CONCOURS AT PARIS.

THE present mode of electing officers to fill the various situations of lecturers and surgeons to hospitals, which is pursued in our own country, has been often brought before the attention of the public, and made the subject of controversy and complaint. It is said, and with some justice, that, while interest and party feeling exert so powerful an influence, as every contest of the kind evidences, little encouragement can be given to talent, and no means are used to ensure the appointment of good men. No attempt is made to test the character, the industry, and the ability of the candidate; there is not even generally a desire to be informed on these points, and if acknowledged, they seem to be considered quite of minor importance, and in many cases are allowed to have no weight at all in regulating the decision. The man who has the strongest interest and the widest connexion stands the best chance; he is brought in by the influence of his friends, who have their own purposes to serve, but care very little for his qualifications. All these things, as well as the generally adopted system of canvassing long before the expected election, and pre-occupying the ground before the desired post is vacant—in short, the whole machinery of the subject, has been frequently brought forward, and criticised with no lenient hand. That much injustice is done to individuals, that the interest of the profession is often sacrificed, and the advantage of the public forfeited by this indiscriminate manner

of conferring important medical trusts, we do not doubt, nor can any one, who is in any degree conversant with these matters. At the same time, in attempting to remove the evil, we must beware that we do not involve ourselves in deeper difficulties.

Among the various proposals that have been made to remedy these acknowledged defects, that one has gained most advocates, which would confer medical appointments upon the men, who shall, by public examination, have shown themselves most deserving of them,—upon those who bear the best character, and who, by their talent and assiduity having attained the highest degree of knowledge in their profession, are most likely to employ it to the public advantage. Such a proposition, at first view, seems to present every reason for its adoption. If properly carried out, it appears to offer the means of fulfilling the two great desiderata of rewarding merit and advancing the welfare of the community. But, as with many other proposals, the great difficulty lies in working out the details of it. The idea is borrowed from the method adopted in France, the professed object of which is, to confer the hospital and other medical appointments on the most proficient and deserving candidates. It is, therefore, but rational to observe its operation in that country, before we hasten incautiously to introduce it into our own. To how many abuses and sources of fallacy it is liable, and how difficult it is to secure a fair and impartial examination and decision, the present transactions in Paris abundantly show.

A concours is at this time sitting to appoint a successor to the chair of Clinical Surgery, vacant by the death of its late occupant, M. Sanson. The number of aspirants, as may be expected, is great; many of them, by their labours, are well known in the

medical world. The contest is, or professes to be, a public one; and each candidate is required to examine patients, to form diagnoses, and to give dissertations on the cases presented to him. One would have imagined this a certain mode of ensuring a correct and impartial decision, especially when we consider that the judges are chosen from among the most renowned Parisian surgeons. But, unfortunately, even here interest and prejudice find a way to insinuate themselves, and exert so powerful an influence, as to render the examination almost nugatory as a trial of merit, and reduce it in great measure to a mere contest of politics and feeling. The candidates have their respective friends among the judges, whom, by canvassing, past services, and promises of future assistance, they have won over to their side; — nay, the personal applications are not made only by the candidates themselves, many cases being reported in which their fair friends were employed as more influential suitors of the judges' favour\*.

We may mention the following as instances of the spirit which, at this time, prevails in conducting these decisions. The chair now vacant is that of Clinical Surgery, and the subject being, in consequence, essentially practical, the examination has, on previous occasions, been confined to strictly practical considerations; its main object being to evince the tact of the candidate in observing patients, in detecting diseases, and in prescribing the proper treatment. In the present instance, however, contrary to all precedent, written answers have been in addition required to cer-

tain set questions, the effect of which has been to open the door to theoretical discussions, and to divert the examination from the more immediate subject of the professorship. The reason of this unfair proceeding is said to originate in a petty feeling entertained by the members of the faculty against certain men of ability, who were feared as competitors, and who, as their great forte lay in clinical observation, were, by the new regulations, obliged to retire from the field. Another ground of complaint is, that the public, who were always before admitted to be witnesses of the proceedings, and even the reporters of the journals, have been lately excluded by a notice posted at the hospital gates, forbidding the admission of any one—except, of course, those immediately concerned—during that part of the examination which refers to the inspection of patients; it being pretended that such inspections were ill suited to the condition of the sick, while the real object of these *humanely* influenced gentlemen was to keep the investigation more secret, and to give better opportunity for the exercise of their own biassed feelings. Even still more direct charges of partiality and interested motives are adduced against some of the judges, in wittingly overlooking errors, in concealing portions of answers given, and in acting in various ways to the prejudice of one party or the advantage of another; while some of them, unable conscientiously to support their friends, yet unwilling to oppose them, have retired from the concours.

We cannot positively state that the representations which reach us are perfectly accurate, or that they are altogether free from exaggeration. Nevertheless it is plainly evident, from the statements in the Parisian journals, that there is great fault in the manner of conducting these adjudications, and

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\* It being the custom in the canvass on these occasions, for the competitors to set off their exterior by wearing white kid gloves, &c., the joke is current in Paris, that a vacancy in the hospital appointments, or of a professorship in the faculty, occasions a rise in the price of these and other similar habiliments likely to captivate the affections of the French.

universal dissatisfaction at the result of them. They show that the issue is scarcely at all governed by the merit of the parties, and that so much manœuvring and tactics are mixed up with them as entirely to nullify the object had in view by the adoption of the concours, and to render them more like the unprincipled contests of a borough election than the fair and impartial means, which they profess to be, of distributing promotions according to merit. All imaginable methods, as display, persuasions, promises, and intimidations—nay, every thing short of actual and open bribery—are employed to influence the judges. That they produce their desired effect is plain from the proceedings on this and other similar occasions. If private feelings and interests be allowed to have power in matters of this sort, where is the advantage of instituting examinations at all? Their effect must be far from beneficial. If candidates are enabled by canvassing and other means to bias the minds and influence the sentiments of the judges to such an extent, it is a mere farce to profess that they are trials of knowledge: they, in reality, only give scope for the exercise of fraud and dissimulation, and, by exciting ill will between the various parties, bring an evil name upon the profession altogether.

That the principle of electing teachers and hospital surgeons which has been pursued in France is in itself essentially good, scarcely admits a doubt. It has, indeed, been formerly productive of many advantages, and has done much to counteract the fertile sources of evil pervading the whole system of medical education in that country. It is a plan peculiarly applicable, where instruction, being under the superintendence of government, and given gratuitously, is likely to be little valued, and, consequently, a stror to appli-

cation is required. Yet we see how this system—apparently good in principle—is capable of being perverted in its operation; and how, by the present mode of carrying it out, it has become an actual evil, even where its good effects were most likely to have been seen.

Neither is this abuse a thing of sudden origin, or recent occurrence: it has long been gradually gaining ground. The French journals have repeatedly denounced the concours system as a vile, base, infamous, and intriguing piece of machinery. In almost every election, which has lately taken place, there have been some representations of unfairness; some charges more or less offensive have been brought against the judges, and some quarrellings of candidates and collisions of parties have occurred. At this time the feeling of discontent has extended still further, and all are urgent in their complaints against the present system, and loud in their clamour for some other. In all this we may, perhaps, make some allowances for that well-known volatility of our neighbours, which, not suffering them to remain long satisfied with any political government, doubtless influences them in endeavouring to seek alterations in their medical code. But the actual grievances in this case do really seem to furnish them with sufficient excuse for their desiring an alteration, and remove from them, with regard to it, the charge of insatiability and discontent.

We advise those who advocate this plan of the concours, and, esteeming it the *beau ideal* of what an election ought to be, would introduce it into our own country, to take a review of the present transactions in Paris: they will then see in how profound a contempt these examinations are held, and how utterly inadequate they are to effect the purpose intended by them;



they will learn that this scheme, so desirable in their eyes, is abused, by those who have it, as the most corrupt and inefficient method that can be devised. Let them examine the accounts of the different concours that have, in the last few years, taken place in Paris and other French towns – the theatrical displays, the mean artifices that are employed by the candidates, and the partiality, the impropriety, and the insincerity, shown by the judges—and, if we mistake not, common sense will render them unwilling to change our own system, imperfect though it be, for one which, with the profession of so much good, really brings with it so many evils. As great mischiefs may arise from the abuse of laws as from the want of them, and it is undoubtedly better to have no endeavour at all to confer medical appointments according to merit, than to have such an attempt mixed up with stratagem, modified by interest, and open to all the intriguing evils of ordinary elections.

### ATTENDANCE ON THE POOR.

*To the Editor of the Medical Gazette.*

SIR,

I AM directed to request that you will oblige the medical gentlemen of the districts comprised in the Brentford Union, by giving insertion to the following resolution, which has been presented to the Board of Guardians.

We, the undersigned medical practitioners resident in the Brentford Union districts, having duly considered the recent regulations of the Poor-Law Commissioners, are of opinion, that the rate of payment proposed by the Board of Guardians for the different districts in this Union "is inadequate to insure proper attention and the best medicines."

(Signed)

*Acton.*—William Clubbe, Henry Day, John Salt.

*Old and New Brentford.*—F. A. B. Bonney, John Farrill, H. J. Radcliffe, Henry Richards.

*Chiswick and Turnham Green.*—W. W. Cox, F. C. Dodsworth, C. C. Eyre, W. Lambton, H. J. Leigh, R. W. Loadman.

*Ealing.*—Henry Wilkins.

*Hanwell.*—Thomas Haffenden, J. T. C. Nicoll.

*Hounslow.*—G. J. S. Camden, Joseph Chapman, C. B. Emmott, R. A. Frogley, John Henley, W. Wheadon.

*Isleworth.*—W. M. Case, H. G. Day, J. Mackinlay.

*Twickenham.*—John S. Alger, C. C. Clark, J. Simoëns.

As the above list includes almost every medical man in the Union who is at all interested in parochial attendance (some of the senior practitioners refusing to attach their names to any thing connected with the subject), it may be confidently stated, that the surgeons of the Brentford Union are unanimous in considering the terms offered by the guardians inadequate to the services required. I inclose the offer of the guardians, and beg to subscribe myself,

Your obedient servant,  
HORATIO G. DAY,  
Hon. Sec.

Isleworth, June 4th, 1842.

*Salaries proposed by the Brentford Board of Guardians for the several Districts of that Union.*

	Popu- lation.	Salary per year.
Acton . . . . .	2665 . .	20 0 0
Chiswick . . . . .	5811 . .	55 0 0
Old Brentford to Gun- nersbury Lane . . . . .	4972 . .	40 0 0
Ealing . . . . .	3435 . .	30 0 0
New Brentford, Brent- ford End to Sion Lane . . . . .	3434 . .	25 0 0
Hanwell, Greenford, and Perrivale . . . . .	2103 . .	30 0 0
Isleworth, exclusive of Brentford End and the Chapelry district at Hounslow . . . . .	3329 . .	32 0 0
Heston, including the Isleworth Chapelry district at Hounslow . . . . .	5405 . .	50 0 0
Twickenham . . . . .	5209 . .	45 0 0
	36363 . .	£327 0 0
Union Workhouse at Isleworth averaging . . . . .	359 . .	£60 0 0

### SURGICAL DIPLOMAS.

*To the Editor of the Medical Gazette.*

SIR,

I HAVE seen two letters in your very useful periodical, from a correspondent who terms

himself Edinburgo-Londinensis, complaining bitterly of the New Poor Law order concerning medical qualifications, and showing, I regret to say, but little affection for Mr. Guthrie.

The fact appears to be with him as follows:—He is a licentiate of the Apothecaries' Society in London, and possesses a surgical qualification from Edinburgh, which, I suppose, he considers as good as the diploma of the London College of Surgeons; it may be so, and doubtless would be, in the neighbourhood of Edinburgh. Had he wished it to be considered so, he should have stopped there; but since your correspondent finds it agreeable or advantageous to practise south of the Tweed, I can see no injustice in his being required to take out an English surgical diploma, in order to receive the advantages accorded to it in England.

Edinburgo-Londinensis thought it advisable to take out the qualification of a London apothecary; why not also of a London surgeon? Probably he anticipated the latter was voluntary. Unfortunately it has been too generally thought so, and very great evils have arisen from the College not having powers equally stringent with the Apothecaries.

Mr. Guthrie, when he undertook to meddle with medical reform (which, I suppose, we may consider his late proceedings with the Poor Law Commissioners to be), engaged in a task which was little likely to bring him praise from all; and perhaps he did not treat the Scotch Colleges with so much love as he might have done; but in trying to do some good for the College over which he presides, and to which he is an ornament, he has placed a noble example before future Presidents: the gratitude of its members he must have to a man, and well deserves the blessings of the poor, for having so negotiated as to save them, when afflicted with surgical diseases or accidents, from being treated by those who possess no surgical qualification at all, and, therefore, whose knowledge in this department, not having been tested, remains doubtful.

Would it not be better that Edinburgo-Londinensis should present himself with his surgical diploma to the College, and request an examination, which I believe they would grant him: the difficulty would then only be that of parting with £22.

If you would grant a corner to the above, you would oblige

A CONSTANT READER.

June 1842.

## CLINICAL REPORT.

*To the Editor of the Medical Gazette.*

SIR,

THE following cases, taken from my diary, are at your service, if you think them worth recording in your journal.—I am, sir,

Your obedient servant,  
ALEX. LEIGH, A.B.M.B.  
Late Royal Rifles.

3, Olympic Place, Jersey.  
May 1842.

### CASE I.—*Fungus Hæmatodes.*

J. L. H. æt. 24, native of Jersey, sanguineous temperament, shipwright, consulted me on the 27th January, 1841, for acute pain and swelling of his left knee, of about six weeks' duration, not directly attributable to injury.

13th Feb.—The acute pain has been relieved by antiphlogistic treatment: counter-irritation, friction, roller, and splints, are reducing the swelling, and preventing contraction. He is also taking alteratives.

15th March.—The swelling is subsiding slowly; no contraction nor pain; is subject to nausea. Pulse 120. He is returning to the country, where he generally resides, and is to continue tonics.

1st July.—He is living again in St. Helier's; has a large fungus discharging blood on the outside of the joint, attended with nausea. Pulse 130.

8th July.—He is delirious; his thigh is swollen, with a sinus ascending on the outside from the fungus.

I determined to give the patient the only chance of recovery by amputation. The surgeons who kindly assisted agreed with me that the flap operation was adapted to the present case. The patient was laid upon the table with his legs projecting over its edge, the affected limb being supported: the tourniquet was applied. I stood on the outside of the limb, transfixed it in the transverse direction anterior to the femur at the middle third, and carried the knife downwards, and brought it out as low as the sound parts would admit: by this means the anterior flap was formed. I transfixed the limb a second time, posterior to the femur, carried the knife downwards and outwards, and formed the posterior flap longer than the anterior. The flaps being drawn back by a retractor, divided the remaining soft parts by a circular incision, the bone being sawn through, and two vessels secured: the flaps were brought together by three points of interrupted suture; adhesive plaster was also applied. He lost very little blood, was removed to his bed, and took an opiate.

On examination, I found the fungus had disorganized the joint.

9th.—He has slept soundly; very little oozing from the stump; pulse 120; bowels free; debility. Wine is ordered.

10th.—No sleep: he complains of his right hip, which is slightly discoloured.

12th.—On examining the stump a portion of the upper flap was found to have sloughed and exposed the bone. The right nates is forming an extensive and deep slough. He is to take quinine, with opium added occasionally, solution of nitrate of silver to be applied, also camphorated spirits.

16th.—Gangrene of the nates is spreading: nitric acid lotion, opium, and ammonia, prescribed.

18th.—The slough from the nates is large, striated, and elastic: part of the sacrum is exposed. There is little action in the stump.

22nd.—Profuse perspiration: the stump and abscess secrete pus. Ammonia with opium to be omitted.

3d August.—The stump is closing; granulations healthy.

23d.—The ligatures not coming away, I cut them as close as possible. A small portion of bone exfoliated. The abscess on his nates is almost filled, and is forming a cicatrix.

9th Jan. 1842.—He appears in good health. The abscess is quite healed. He has a good stump, with sound cicatrix over the bone. A trifling discharge continues in the direction of the ligatures, also inflammation caused by imprudently walking six miles on his crutches. He is directed to apply a poultice.

6th May.—I saw him this day; he called to show me a ligature which was discharged some time since. The stump is quite healed, he walks well with a wooden leg, and enjoys very good health.

#### CASE II.—*White swelling.*

August 18th, 1841.—John Le B., æt. 23, native of Jersey, of nervous temperament, a shoe-maker, has suffered eight years in his right knee, and submitted to the usual treatment, which proved useless. He is in a hectic state, from suppuration in the joint, which communicates with an abscess on the outside of the knee. The blood-vessels supplying the joint are much enlarged. He is almost worn out with suffering.

I amputated in the middle third of the thigh, in the same manner as in Case I. omitting the use of the retractor, the flaps being simply held back: nine vessels were secured (veins and arteries); the flaps were brought together by three points of interrupted suture: no plastering. He was removed to his bed, and cold water applied to the stump. The joint is disorganised, carti-

lages removed, bones carious, and abscesses communicating with the joint.

He had taken too much wine this morning, and could not be kept quiet; consequently, four hours after the operation, hæmorrhage came on. I cut the sutures, and found a subcutaneous artery bleeding profusely: I secured it, and brought the flaps together again with sutures, and continued the application of cold water: he discharged his stomach, and became quiet. In four hours isinglass plaster was applied, and tepid water dressing substituted for cold. An opiate, to allay irritability and induce sleep, was administered.

19th.—He had refreshing sleep: slight oozing from the stump, which is swollen: I removed the sutures.

24th.—The stump discharges a moderate quantity of matter: I removed some of the plaster.

25th.—I applied a bandage: he continues on low diet.

31st.—Six ligatures came away: he is sitting up: ordered better diet.

Sept. 2d.—The flaps have united: some discharge from the sides of the stump: pulse 105: all the plaster removed.

4th.—To take port wine with quinine in it. Argumentum a particulari ad universale.

It is a local doctrine, that Jerseymen require stimulants and tonics after operations.

8th.—The stump is almost healed.

13th.—I removed the tenth and last ligature: simple dressing of cerat. calamin. to be applied.

15th.—The stump is cured. He found the quinine spoiled the taste of the wine, and took very little. When last I saw him he was in good condition, and felt better than for many years.

The minutæ of Liston's treatment were strictly observed, and the result satisfactory.

#### CASE III.—*Extensive Ulceration.*

October 12, 1841.—Mrs. B., aged 53. Catamenia regular; has had several children; charwoman; English. About four years ago an inflamed bursa under her right patella was lanced by an ignorant practitioner; since then the ulceration spread round the knee; also above and below, destroying the skin and fascia. Her suffering was so acute that she entreated to have her leg removed. She was almost exhausted from the offensive discharge and want of sleep. She denied having had syphilis.

20th.—I amputated above the middle of the thigh, in the same manner as the preceding. Five vessels were secured, and the flaps brought together as in the previous cases. She lost very little blood.

The joint was not diseased. I gave her an opiate, and had cold water carefully ap-

plied to the stump eight hours, when isinglass plaster and tepid water dressing were used.

21st.—Very little oozing; not much swelled; I cut away the sutures.—23d, I applied a bandage.

27th.—She is sitting up; I removed the plaster; the flaps have united.

29th.—Matter discharges from the front of the stump.

Nov. 10th.—I removed by some force the fifth ligature; there is scarcely any discharge.

11th.—The stump is almost cured: water dressing ordered to be omitted, and simple dressing used instead.

Jan. 15th, 1842.—She has perfectly recovered her health and strength.

From my experience in Liston's flap operation, I consider its success depends, in a great measure, on strictly following his instructions in the dressing. It will not admit of the plastering used in the circular.

## TRIAL OF THE COLD WATER SYSTEM.

BY LICENTATE BLICH, OF CHRISTIANA.

THE author tried the plan in sixty-five cases, all chronic, in the majority of which a decided dyscrasia was present. The violent and daily perspiration, which is the special characteristic of the Gräfenberg water-cure, was employed by the author, as a general rule, only when the dyscrasia was very manifest. The following is his general method of treatment. First comes a preparatory course, lasting from three to six days; it consists in washing the whole body with cold water in the morning, and then walking about in the open air. At the expiration of this period, the patient is stripped, wrapped up pretty tightly in blankets as far as the neck, and round it, and then covered with a large counterpane. The head is enveloped in a cloth, which projects over the face and cheeks, so as to leave the mouth and nose free. This having been done, in most instances a copious perspiration breaks out, within two or three hours, or frequently sooner; this is kept up from two to four hours, while the patient drinks cold water from time to time, to quench his thirst, and promote exhalation. The patients are now taken out of the blankets; and to avoid the trouble of having a bath in the room, the author places them in a flat empty tub, and has them sprinkled with one or two pails of water. The temperature of the water varies from 8° to 18° of Reaumur (50° to 72½° of Fahrenheit), according to the greater or less sensibility of the patient; and while this is going on, he rubs himself briskly with his hands, to diminish the sudden feeling of

cold. The patient then dresses, and in case the shower bath has made him too cold, drinks a glass of cold water, takes a short walk in the open air, and then breakfasts on bread and butter and cold milk. Another walk is taken before noon, and a couple more in the afternoon. Two or three measures of cold water are drunk daily, particularly before and during walking; and according to circumstances, clysters, injections, sitting and other local baths, fomentations or douches (all of cold water), are employed. The diet is nourishing but not stimulating, and warm drink or food is not followed. The patients usually followed their ordinary occupation during the course, but with moderation.

In this manner the author observed the chief points of the Gräfenberg system, namely, by introducing a quantity of water into the system, allowing it to pass through, and be secreted from it again, together with different morbid materials, (or whatever they may be called), by the increased and critical evaporation from the skin, without any consequent relaxation of the cutaneous surface, or weakening of the restorative power. Before the author proceeds to give a report of the individual cases, he premises some remarks on the various points of the treatment, as far as his observations differ from those hitherto made, or may serve as a supplement to them.

*Sweating* was employed in the majority of cases, but only once a day, with the exception of 16 cases\*; namely, in eight patients who had nervous rheumatic pains, and exhausting perspiration; one with copious hectic morning sweats; two with varicose swellings; one with disease of the knee-joint; one with chronic vomiting; and three with bronchitis. It was more or less difficult to produce perspiration. In some instances it was necessary to cover the face, before perspiration could be called forth; in one patient only, who was suffering from ascites, it was impossible to produce it at all. One of the most constant inconveniences from the continuance of the sudorific treatment is obstinate costiveness, which, however, often yielded in part to the cold clysters, and as the treatment went on, got right of itself.

The water drunk seldom exceeded from three to four measures daily, but was often less; it showed its benefits more decidedly and with special rapidity in chronic irritation of the stomach accompanied by vomiting, both when used alone, and when combined with sweating. The hearty appetite

\* The sentence is so obscurely expressed, as to leave it doubtful whether these sixteen cases were sweated more than once a day, or not at all; but it is clear from the rest of the paper that the former is intended.—*Translator's Note.*

which many patients gain during the course, the satisfying which does not always agree with them, is also partly diminished by the liberal use of cold water at meals.

If too much water is drunk at the beginning of the course, the urine is often increased at the expense of the perspiration; and those patients who are unable to take sufficient exercise, feel uncomfortably cold, and take a disgust to the water. The douche was only employed in a few cases, chiefly local ones, where there was atrophy, or imperfect paralysis of a limb. Its effect was excellent, and it seems to have brought out local and critical eruptions.

The sitting-bath was applied chiefly in diseases of the abdomen, and affections of the urinary passages and genital system; but in a few cases it produced headache and obstinate rheumatic ophthalmia.

The author observed a true febrile crisis only once. It occurred on the seventh day of the treatment of a diseased knee-joint, was combined with severe headache, violent pain over the whole body, which lasted two or three days, and ended after a critical perspiration and vomiting. In three cases only the author observed considerable diarrhoea; in the rest, merely the usual cutaneous eruptions, particularly on the places where the fomentations were applied. These were absent in very few cases.

The majority of the diseases which the author treated in this way were of a rheumatic type; either rheumatic neuralgiae, or other diseases in which rheumatism appeared to play the principal part. Thirteen were cases of common rheumatic neuralgiae; eleven being men, and two women. In seven of the women the pains were chiefly in the limbs; in two there was cardialgia; one suffered from hemicrania, and one from neuralgia in the breast, with gout in the hip-joint. Twelve of these cases were cured or relieved for a time; in two, the method failed completely.

Another disease, in the treatment of which the author promised himself much from the Priessnitzian method, and the more so because baths were long considered a principal remedy in its cure, was scrofula. There was no disease, however, in which the results were so unfavourable; for of six patients, three died, two were relieved, and only one cured, and even in this instance it is not known whether the disease has returned.

Four cases of inveterate syphilis were treated. In two there was sore-throat, accompanied in one case by condylomata; in a third there were sores on the tongue; and all three had had several relapses after the use of mercury, sarsaparilla, and guaiacum. In one patient the treatment was

pursued for five months, and effected a perfect cure without relapse. The second and third were cured of the local affections in a couple of months; but one became tired of the treatment, and the other was obliged to go away, and therefore discontinued the treatment. The author has heard that the symptoms returned afterwards in both cases.

In the fourth case, which was cured, the patient, besides having been subjected to Dzondi's course of corrosive sublimate, had used assafoetida and decoction of sarsaparilla, besides local remedies. In this instance the perspiration had a frightful fetor—the only example among the author's cases.

Of two cases of chronic disease of the skin, one was a patient suffering from eczema impetiginoides, who is still under treatment. The other was afflicted with psoriasis inveterata of several years' standing, which during the last year had spread over the whole body, except the palms of the hands and the soles of the feet. He used a variety of remedies without the smallest benefit. The water-system, which at first excited considerable diarrhoea and perspiration, produced no benefit in six weeks; so that the patient could no longer be persuaded to continue the course, which had caused him so much inconvenience and pain. After the nitrate of silver had also been tried in vain, he was rubbed for some days with the common tar ointment. The cuticle now fell off in large pieces, and under it was formed a fresh one, without scales, except in a few places; and in those, too, the scales vanished in a few days, after the energetic employment of sweating. A year has now passed, and there has been no relapse.

This case is one of those which have induced the author to think that a combination of the water plan with local remedies is beneficial in many cases, and effects an alteration in the structure of the diseased organ; while the new treatment alone could only do this slowly, and that indirectly, by removing the dyscrasia.

*Diseases of the mucous membranes, and blenorrhæa.*—The author treated twelve cases of this class, where, for the most part, the intestinal canal, or the trachea and its ramifications, were affected. Among these, the best results occurred where there was chronic inflammation of the mucous coats of the stomach, for of five patients four got well. The fifth (uncured) was affected at the same time with scirrhus of the stomach.

The treatment of chronic inflammations of the trachea and bronchi was less fortunate. There was one case of laryngitis, and four of bronchitis. The case of laryngitis is still under treatment. Of the four cases of bronchitis two were complicated with crude tubercles. One of these was cured by cold



washing and frictions, so that a cough which had lasted several months was cured, and the patient considered himself well. The other, whose cough was accompanied by considerable hæmoptysis, became worse, has hectic fever, and will hardly live through the summer. The third suffered at the same time from emphysema of the lungs, and constant night-attacks of asthma, and is also uncured, although the mucous rattle was much lessened during his two months' course. The fourth still continues the course, but with little effect.

*Blenorrhœa of the vagina*, which was combined with several of the previous cases, was, in general, cured or considerably relieved during the course.

*Diseases of the serous membranes, and serous effusions.*—The author treated one case of arachnitis spinalis accompanied by partial paraplegia, besides a case where there was ostitis, (osteitis?), two of hydrops ovarii, one of anasarca, and two where there was effusion into the joints; but as these last ones cannot be considered separately, they are mentioned under other heads.

*Diseases of the abdominal organs.*—The author can say nothing positive about these maladies, except the affections of the mucous membranes above mentioned; though the treatment of such cases is said to have been universally successful at Gräfenberg.

*Organic diseases of the abdomen.*—Besides the case of scirrhus of the stomach, and one of hypertrophy of the liver, which were not affected by the course, the author treated a patient suffering from infarctus of the liver and spleen, and one suffering from ascites, but both only for a short time, and without advantage.

*Diseases of the brain and of the thoracic organs.*—In addition to the cases already mentioned, there was one of hypertrophy of the heart with induration of the aortic valves, and oedematous swelling of the feet; but the treatment was of no avail.

*Diseases of the uterus and ovaries* were treated with greater success. One patient, with a fibrous tumor of the uterus, was bed-ridden, and emaciated in the highest degree. The water treatment perfectly restored her general health, but the tumor remained the same. Another woman was suffering from polypous excrescences in the os uteri, as well as a long train of hysterical symptoms. The treatment had no effect upon the polypi, but most materially relieved the hysteric rheumatism.

There were three cases of ovarian dropsy, which in two instances were combined with scirrhus. In these two there was no perceptible improvement; and in the third case the treatment was not able to effect much in five weeks.

The treatment was employed for two months against a scirrhus of the breast; it removed the pain for a time, but the swelling remains the same.

*Chronic induration of the parotid gland, with fistulous sores.*—This was probably a case of the enchondroma described by J. Müller. In a couple of months the swelling was considerably diminished, but the patient could not be induced to continue the course.

*Chronic inflammations of the joints, and affections of the bones.*—These were the cases in which the treatment was most efficacious. There were six cases of diseased joints; four where the malady was in the knee, one in the hip, and one in the shoulder. Four of these patients were cured, and one relieved, who is still under treatment.

In one case, the disease was in the knee-joint, and there was a considerable effusion of synovial fluid, accompanied by constant pain, and a wasting of the whole extremity. The patient, a woman 40 years old, had been treated for two years in the usual way with leeches, moxa, and a whole series of derivative and resolvent remedies, but without advantage. The water treatment continued for a year dispersed the accumulated fluid; and for several months before the end of the term she was able to walk without a stick. In a few days after its commencement, the course produced a strong reactional fever, and the knee, the lower part of the thigh, and the calf, were covered during the whole time with pimples, pustules, and boils.

*Caries of the bones, with chronic fistulous ulcers.*—Four cases were treated of this disease. One was a caries of the vertebræ, one of the mastoid process, and two of the femur. Two are still under treatment, of whom one is considerably relieved. The other two are reported as cured; but the author thinks it right to state that he has not spoken to them, since they discontinued the treatment.

Lastly, Licentiate Blich treated a varicose ulcer of the leg of sixteen years' standing, and cured it perfectly in half a year, though the varicose dilatation of the veins remains as before.

A case of erectile swelling on the arm has long resisted the treatment, which is still continued. On the whole, of 65 patients, 20 have been cured; 14 have discontinued the treatment without being cured; 15 were not cured, of whom 5 died, and three of these probably in consequence of the treatment; and 15 are continuing the treatment, with more or less hope of a favourable result. In one case the result is not known. The length of the treatment varied from three days to a year; the average was 10½ weeks. It succeeded best in irritation of the mucous membrane of the stomach, and inflammation of the

joints; and worst in glandular diseases with tubercular formations in the nobler internal organs.—*Abridged from Schmidt's Jahrbücher.*

[This excellent and candid report gives a favourable impression of Licentiate Blich's medical abilities; and will be a stronger inducement to the philosophic inquirer to try the system, than the indiscriminate eulogies lavished by other writers. — *Translator's note.*]

## EVACUATION OF AN ABSCESS OF THE LUNGS THROUGH A LEECH-BITE.

By Dr. A. BARACH, of Lemberg.

A RUSSIAN female, aged fourteen, had married at thirteen, before the commencement of the catamenia, and had never been ill. Four months before her malady began, the catamenia appeared for the first and only time. The present illness began suddenly, in June, 1841, with a feeling of weight and beating in the chest and between the shoulders, and a stabbing pain between the fourth and sixth rib, which made her cough, and prevented a deep inspiration. After topical blood-lettings, the pain between the shoulders went off, but a dry cough appeared, with increase of the stabbing pain in the chest. Leeches were again applied, and a saline mixture given, but without advantage. The patient now went in a wretched vehicle to a physician at a distance, and in returning was tormented by a sense of anxiety in the chest; she also had strong fits of a suffocative cough, during which, to the great relief of her dyspnoea and pain, much thick and fetid pus was evacuated from the thorax; the quantity being about ten ounces in four or five days. The patient then became feverish, coughed much, and complained of tightness, beating, and burning in the chest, at the part where the leeches had been put on. One of their bites had become converted into a vesicle. While the attempt was making to open it, nearly two ounces of pus spirted out. The fever and cough went on, while the evacuation continued by fits and starts. On the third day the discharge of pus began to diminish; but it became considerable again on the patient's resuming her journey until she arrived at Lemberg, where the wound soon closed. Though the patient was hectic, and the prognosis unfavourable, she recovered perfectly under suitable treatment. There is another remarkable point in the case. The third day after the vesicle was opened, when the pus began to flow less freely, the inspired air was expelled from the open wound with a bellows murmur, and was hot.

This confirms the fact, says Dr. Barach, that at every expiration a quantity of air is left in the lungs, which assumes their temperature.—*Schmidt's Jahrbücher*, from the *Oesterr. Med. Wochenschr.*

## SIMPLE AND CHEAP METHOD OF PREPARING HYDROCHLORIC ACID.

MUCH difficulty is experienced in procuring pure and concentrated hydrochloric acid for chemical purposes, the common commercial acid containing various impurities, particularly sulphuric and sulphurous acid, free chlorine, chloride of iron, and sulphate of soda; these arise from impurities contained in the materials employed; the chlorine, from the action of nitric or nitrous acid (often present in oil of vitriol) on the hydrochloric acid; sulphurous acid, from organic particles in the common salt employed; and chloride of iron, from the presence of that metal also in the salt. Pure and clean materials are therefore the first requisite for a pure acid. Dr. Gregory finds that, if to one equivalent of salt, two equivalents of sulphuric acid diluted with a certain quantity of water be used, instead of one equivalent, as usually prescribed, the whole of the hydrochloric acid may be expelled without a trace of sulphuric acid passing over even into the first condensing bottle, and that two-thirds of the hydrochloric acid distil over before water is volatilized. On this observation the following process is founded:—

Into a common Florence flask are introduced four ounces of the purest patent salt, and five fluid ounces of sulphuric acid of specific gravity 1.600; a gentle heat is applied, and the gas, which is then generated, is conducted by a bent glass tube into a four-ounce phial, containing two ounces of distilled water, surrounded by snow or ice-cold water. No safety tube is required, as the tube is made to dip only about one-eighth of an inch into the water, so that should any absorption take place the rise of a little water in the tube exposes the extremity of it, so as to admit the air; or, for greater security, a small ball may be blown on the descending limb of the tube. The gas is absorbed as fast as it comes over, and for the first hour and a quarter the heat hardly requires to be increased, if the temperature of the surrounding water has been kept so low as 50°; the two ounces of distilled water will have increased in volume to three ounces of colourless hydrochloric acid, fuming strongly, and having a specific gravity of 1.20 to 1.21, the gas passing over so dry that no part of the tube becomes warm.

This portion being removed, its place is supplied by two ounces more of distilled water, and the heat gradually increased and continued for an hour longer; by that time all the hydrochloric acid is expelled with some water, and the two ounces of water have become three ounces of hydrochloric acid of specific gravity, 1.10. Both portions are absolutely pure. If three ounces of water are used in the first instance, 4.5 fluid ounces of acid of specific gravity 1.165 are obtained; and then replacing the acid by two ounces of water, 3.5 ounces more of specific gravity 1.065. If five ounces of water are used at once for condensing the acid, and kept till the distillation is complete, 7.5 fluid ounces of specific gravity 1.155 are obtained.

Dr. Clark finds sulphuric acid of a specific gravity of 1.65 to answer still better than acid of 1.60.—*Dr. W. Greg ry, in Proceedings of the Chemical Society of London.*

### LONDON UNIVERSITY.

MR. RYMER JONES has been elected Examiner, in the room of Dr. Roget, whose resignation was announced some months ago.

### SOLUTION OF CALCULI.

*To the Editor of the Medical Gazette.*

SIR,

THE writer of this note having discovered a menstruum for phosphatic calculi, speedy in its action, but of so mild a nature that it may be injected into the bladder, is most anxious for immediate opportunities of testing its efficacy in calculous cases; and would be greatly obliged if any of his professional brethren would assist him in this matter. It will be obvious that this is necessarily a preliminary step to publication.

Your obedient servant,  
S. E. H.

June 8, 1842.

Address to the care of Mr. John Churchill, Publisher, Princes Street, Soho.

[The above is authenticated by the name of the writer.—ED. GAZ.]

### APOTHECARIES' HALL.

#### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, May 26, 1842.*

H. A. Arden, Dorchester, Dorset.—C. W. Chubb, Devonport.—W. Skelding, Bridgenorth.—W. Reynolds, Northam, Devon.—F. W. Johnson, Wathington, Norfolk.—J. J. C. Pilkington, Preston, Lancashire.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, May 28, 1842.

Small Pox .....	5
Measles .....	32
Scarlatina .....	17
Hooping Cough .....	39
Croup .....	10
Thrush .....	1
Diarrhoea .....	7
Dysentery .....	2
Cholera .....	0
Influenza .....	3
Typhus .....	25
Erysipelas .....	5
Syphilis .....	1
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	154
Diseases of the Lungs, and other Organs of Respiration .....	255
Diseases of the Heart and Blood-vessels ....	30
Diseases of the Stomach, Liver, and other Organs of Digestion .....	51
Diseases of the Kidneys, &c. ....	4
Childbed .....	5
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	4
Rheumatism .....	0
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	2
Diseases of Uncertain Seat .....	83
Old Age or Natural Decay .....	62
Deaths by Violence, Privation, or Intemperance .....	31
Causes not specified .....	2
Deaths from all Causes .....	833

### METEOROLOGICAL JOURNAL.

June	THERMOMETER.	BAROMETER.
Wednesday 1	from 39 to 71	30.19 to 30.14
Thursday . 2	53 69	30.15 30.28
Friday . . . 3	37 70	30.31 30.20
Saturday . . 4	41 73	30.12 30.04
Sunday . . . 5	44 72	29.99 29.92
Monday . . . 6	44 75	29.93 30.08
Tuesday . . 7	46 74	30.14 30.22

Wind, S.W. on the 1st; N.W. on the 2nd; E. by S. and S.W. on the 3d; S.W. and S.E. on the 4th; S.E. on the 5th; N.E. and E. on the 6th and 7th.

Except on the evening of the 4th, and morning of the 5th, generally clear; no rain since the 27th ult.

CHARLES HENRY ADAMS.

### NOTICES.

WE have been requested to state, in answer to inquiries on the subject, that the engravings from the portrait of Bransby B. Cooper, Esq. are now in the hands of Messrs. Paul and Dominic Colnaghi, Pall-Mall East, who have kindly consented to take charge and dispose of them for the benefit of the Society for Relief of Widows and Orphans of Medical Men in London and its Vicinity.

"A Subscriber" (Bedford), will find his question answered in the present number.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, JUNE 17, 1842.

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LECTURES  
ON THE  
ANATOMY AND PHYSIOLOGY OF  
THE INTESTINAL CANAL;

MORE ESPECIALLY OF ITS MUCOUS MEMBRANE.

*Being the Croonian Lectures for 1842,  
delivered at the Coll. of Physicians,*

By R. B. TODD, M.D. F.R.S.

Professor of Physiology in King's College, London,  
and Physician to the King's Coll. Hospital.

LECTURE III.

THE mucous membrane of the intestinal canal is of that nature which, in my last lecture, I described as the involuted kind. It presents this character throughout its whole tract, from the pylorus to the anus.

By its involutions it forms tubes, which are arranged, side by side, and vertically to the submucous areolar tissue: their orifices are directed to the cavity of the intestine, so that they can pour into it the mucus which they secrete. When, therefore, a vertical section of the intestinal mucous membrane, in any part of its course, is examined, it will be found to be composed of these vertical tubes, which are merely involutions or foldings of the membrane, containing, as I pointed out in my last lecture, the elements of that texture, its basement membrane, and epithelium, and nourished by the blood-vessels brought to their parenchymal surface by the subjacent areolar tissue. These tubes afford an example of the simplest form of involution of the mucous membrane; but occasionally we see a slight complication, from many of them being bifurcated at their blind extremities.

The diameter of these tubes is pretty uniform throughout their whole depth; and it is this circumstance which constitutes the main difference between the tubes of the intestine and those of the stomach. The

latter are irregular, and bulging towards their blind extremities; the former are uniformly cylindrical throughout. The tubes of the stomach, at least in most of the higher vertebrata, open into the bottoms of cells; those of the intestine have, each, a distinct opening into its cavity. If, then, a piece of intestinal mucous membrane be viewed on its free surface, it is found to present an innumerable multitude of minute foramina, which are the orifices of these tubes.

These tubes are commonly described under the name, *follicles of Lieberkühn*; they were well known to Brunner, who flourished several years earlier than the last named anatomist, and are accurately represented by him in the second plate of his book on the Duodenum; they were also known to Leuwenhoek, who, however, mistook them for muscles. It is only very lately that we have become acquainted with their true structure: the use of high powers, and an improved mode of illumination (I allude to the achromatic condenser), have revealed to us the large quantity of columnar epithelium which enters into their composition\*.

The peculiar arrangement of these tubes gives to the mucous membrane its apparent thickness. The tubes of the small intestine are longer than those of the large; consequently the mucous membrane of the former appears thicker than that of the latter. In

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\* In my Gulstonian Lectures for 1839, I stated my inability to find columnar epithelium in the stomach tubes, and thus appeared to impugn the accuracy of Henle, who, by his method of scraping, ascertained its presence in that organ. Henle did not, however, say where it was to be found. I have since ascertained that it exists in the walls of the tubes, but not throughout their whole extent. Towards the blind extremities of the tubes the epithelium is globular (fig. 1): in the rest of their extent it is columnar: on the free surface of the mucous membrane it is scaly. In Lieberkühn's follicles the epithelium is columnar throughout.

FIG. 1.



*Stomach tube of dog at its blind extremity showing its bulgings and globular epithelium.*

a, Basement membrane.

b, Globular epithelium, inclosed in a bulging portion of the tube.

all respects of structure, the tubes of the two divisions of the intestine are precisely the same.

It must be evident to the most superficial observation how admirably this arrangement is adapted to obtain a great extent of mucous surface within a limited amount of space. Are Lieberkühn's follicles the seat of a special secretion; or are they merely disposed with reference to obtaining the greatest possible amount of surface? It seems evident, that they must be the principal source of the mucus which is found on the intestinal surface; but how that fluid differs from the secretion of the other intestinal glands, we have at present no means of determining.

Besides these foldings into tubes, the mucous membrane of the small intestine presents other minute foldings, which are precisely like the follicles of Lieberkühn, turned inside out. These processes are termed *villi*; they project from the free surface of the mucous membrane into the cavity of the intestine, and are admirably adapted to become implanted, like so many little roots, in any semifluid or fluid material which may fill the intestine. Hence the comparison of these little processes to the spongiolæ of plants is not without foundation from anatomy.

The structure of a villus is precisely the same as that of an everted Lieberkühn's follicle; that is to say, it is composed of columnar epithelium, placed vertically to the basement membrane, and adherent to it by the sharp extremities of the epithelial columns. The cavity of the villus is occupied by vessels, lacteals, nerves, and areolar tissue; that of the Lieberkühn's follicle contains

only the secreted product, and opens, as we have already seen, into the intestinal cavity.

An accurate idea of the relation which the villi bear to Lieberkühn's follicles may be obtained from examining the diagram of invaginated mucous membrane, which I shewed in my last lecture: fig. 7, p. 384.

In fig. 2 is shewn a vertical section of a portion of the mucous membrane of the dog, in which the relative position of these two kinds of folding of the mucous membrane is well displayed.

FIG. 2.

*Section of the mucous membrane of small intestine in the dog, showing villi and Lieberkühn's follicles.*

Villi exist only on the mucous membrane of the small intestine; the term *villous membrane*, although frequently used synonymously with mucous membrane, is correctly applicable only to that of the small intestine. The villi are developed gradually at the upper part of the duodenum. They originate in an elongation of the partitions between the cells, which, precisely similar to those of the stomach, occupy the mucous surface of the upper part of the duodenum. These partitions gradually become more and more elongated, forming villous folds, and the apertures between them gradually contract.

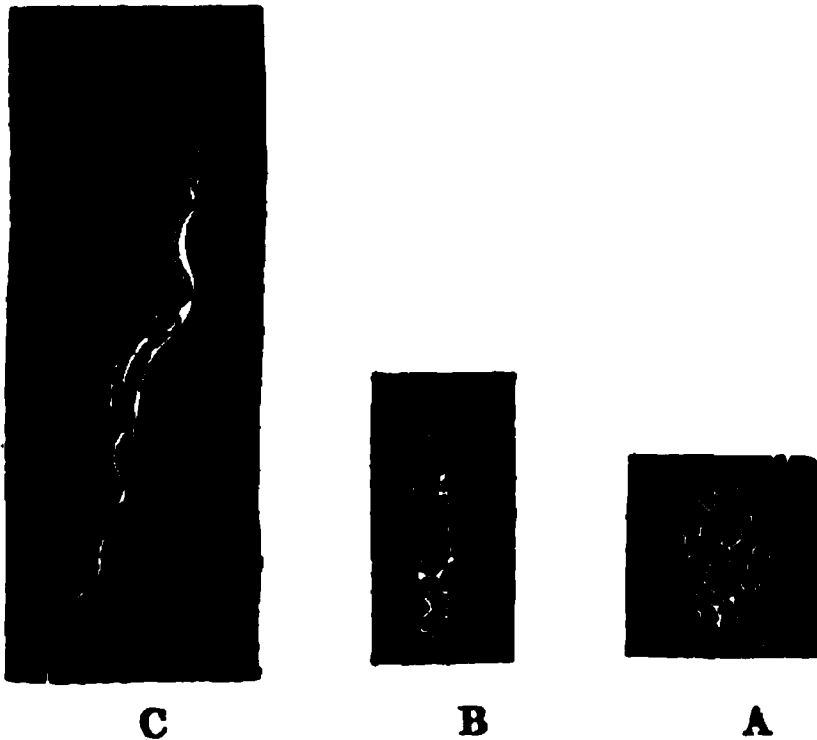
Villi present many variations in shape and in length. In man their outline is triangular, and their length varies from 1-36th to 1-48th of an inch. In the dog and cat they form long filiform processes. In the turkey they form large lamelliform folds.

The villi are most numerous where the most active process of absorption is going on; that is, in the inferior third of the duo-



denum, and in the upper part of the jejunum. Their vessels are very numerous; and in a well-injected specimen a beautiful capillary plexus may be seen beneath the whole surface of each villus. This plexus is supplied by a central artery, which passes through the axis of the villus, and, at its free extremity, breaks up into the beautiful capillary plexus which is visible on its surface; from this plexus several small veins carry off the blood (fig. 3).

FIG. 3.



Injected villi of a dog.

A B, Free extremity, shewing the capillary plexus.

C, The central artery alone injected.

Krause delineates the lacteals as forming a plexus in each villus; upon this point I cannot give an opinion. It is quite certain, however, that pores, or orifices for absorption, do not exist, as Cruikshank and others thought. I regret to add, that I am unable to specify the precise relation which the nerves bear to the villi.

There seems every reason to regard these organs as specially endowed with the absorbent function. Their anatomical constitution admirably fits them for this function; they exist in that part of the intestine where absorption is most active: during chylickation we see them turgid with chyle. It is true that absorption of chyle takes place without them, as in the large intestine, and in those animals that have them not.

The mucous membrane of the large intestine is quite the same as that of the small, the villi having been abstracted.

*Glands of the intestine.*—Besides Lieberkühn's follicles, there are certain special glands existing in different parts of the intestinal tract. Some of these are frequently the seat of disease, and therefore it is very necessary that the physician should have an accurate knowledge of their nature and position.

We may enumerate three classes of glands:—

1. *Brunn's or Brunner's glands.* I prefer to give to these glands the name *duodenal*, for they strictly belong to this portion of intestine, and form one of its principal characters. They were discovered and described by J. C. Brunn in 1686. The best mode of displaying them is that which he advises, namely, to slit up the intestine; pin it, with its mucous membrane downwards, under water; and then dissect off the serous and muscular coats. The glands will be found arranged in the submucous coat, where they present the appearance of numerous small white bodies or grains, scattered throughout the tunic, very numerous towards the pylorus, and gradually diminishing in number, and ceasing altogether at the end of the duodenum. They precisely resemble the elementary grains of a salivary gland, spread out on an expanded surface, instead of being collected into a mass. They commence abruptly, at the duodenal side of the pyloric valve, but cease gradually, becoming less and less numerous, as the duodenum advances. They vary a good deal, both in size and in numbers, in different individuals; and in a few cases I have had great difficulty in finding them, owing to their being extremely small. Like other glands of the intestine, they seem to me to waste and almost entirely disappear in many old persons. These glands belong specially to the duodenum; and the appropriateness of the name *duodenal* is enhanced by the fact, that no other part of the intestine ever exhibits any structures like them.

Such is the description of them in man. They are distinct, but occupy a small space, not more than an inch beyond the pylorus, in the cat, dog, and rabbit. In the horse they are larger than in any animal I have examined them in; in him they form several layers surrounding the intestine, each layer containing grains of a different size, the larger ones being nearest the mucous membrane.

The structure of these bodies is precisely the same as that of the elements of salivary glands, or the conglomerate gland of the older anatomists. Its ultimate secreting element consists of bunches of vesicles, as may be seen in fig. 4, which is a diagram to show their structure, as I have observed it under a high power, and their relation to the intestine. The vesicles C have ducts emerging from them, which, by coalescing, form large ones, and these pass through the submucous tissue, and open on the surface of the mucous membrane, between Lieberkühn's follicles, or by becoming continuous with them.

2. The second class of intestinal glands have received the name "*solitary glands*,"

FIG. 4.

*Diagram of a magnified view of Brunner's glands.*

- A, Lieberkühn's follicles.
- B, Ducts of the glands.
- C, Terminal vesicles of the glands.

*glandulae solitariae.* Several anatomists and physicians confound them most erroneously with Brunner's glands; from which, however, they differ very materially in structure, in position, in liability to disease.

The solitary glands are scattered throughout the small intestine, and are most numerous below the duodenum; they also exist in considerable numbers in the large intestine, especially in the cæcum and vermiform appendix. If you examine the cæcum of the dog, you obtain an excellent example of them on a large scale. They are simple vesicular bodies, resembling in section a Dutch bottle, wide at their blind extremity, and tapering to the surface of the mucous membrane, on which they open by a very fine orifice, not easily seen in the human subject, especially in the glands of the small intestine. Each gland is deposited in the midst of Lieberkühn's follicles, and therefore appears surrounded by a zone of the orifices of these tubes. When filled with mucus, or any other material, they appear

like little spherical bodies in the submucous coat, and cause a prominence of the mucous coat towards the cavity of the intestine. On the other hand, when empty, they are so flaccid and thin, that they may readily elude the observation even of an experienced

*BRUNNER'S GLANDS.*

3. The *agminate glands*—*glandula agminata* s. *aggregata*—are familiarly known by the name, *glands of Peyer*. They are elaborately described by Peyer, and also by Wepfer; but they were previously known in this country, and had been described and figured in a great number of animals by Dr. Grew.

These are aggregations of papilliform bodies, which, as regards structure, are vesicles, tapering to a pointed extremity, precisely like the solitary glands. Each papilliform body is lodged in a cup-like cavity, and may, in this respect, be compared to the calciform papillæ situate at the back part of the tongue. They are collected together into, generally oval, sometimes circular, patches; which are always on or towards the free border of the intestine, never on its mesenteric border—and therefore; in proceeding to examine them, you must open the intestine along its mesenteric border. It is always advisable to examine these glands under water, and, in washing them, you should not let a large stream fall upon them, but the adhering mucus should be removed as gently and as carefully as possible. The papilliform vesicles, which constitute the essential part of the glands, are so delicate, especially in the human subject, that the slightest violence is apt to destroy them.

These patches may first be seen at a distance of about seven or eight feet from the pylorus: here they are very small, roundish—about a quarter of an inch in diameter, frequently very indistinct, so that, without great care, they may be readily overlooked. From this place to the junction of the ileum with the cæcum they are found at intervals; the length of the patches for the most part increasing, as you proceed, towards the large intestine. In number, the patches vary from 17 to 32, and in size I have found them to measure, the upper ones a quarter of an inch to one inch in their long diameter—the lower ones two to four inches—and the short diameter from a quarter to half an inch.

These glands are very variously developed in different individuals. They are most distinct in young subjects, and gradually become less prominent with the advance of age. In this respect there is a similarity with the duodenal glands. In the lower animals they are very distinct, and appear to have much more firmness, and greater cohesion. In the dog, cat, lion, the papillæ are large; in fig. 5 is a view of a section of one of the patches; and here the papilliform bodies may be very

distinctly seen projecting between the tubules of Lieberkühn, and the villi. In the rabbit the glands are very distinct, as well as the cup-like sheaths which embrace them.

FIG. 5.

*Vertical section of a patch of Peyer's glands in the dog.*

Have these papilliform vesicles orifices at their apices? My own opinion would lead me to answer this question in the affirmative; but Henle and others maintain that they are closed cells, and that they burst, in order to discharge their secretions. It would be exceedingly difficult to distinguish a small orifice at the apex of one of these bodies, and I cannot confidently say that I have seen one: but in the solitary glands, between which and their bodies I can see no material difference of structure, the orifices are very distinct in the large intestine; and, although they are not so obvious in the small, yet I have frequently seen them there also; and in the dog and cat, and sometimes in man, they are distinctly visible to the naked eye. Henle, Purkinje, Schwann, Wasmann, and others, believing that these closed cells not only exist in mucous surfaces, but likewise form the terminal vesicles of the salivary and other glands, have advanced the doctrine that the first part of the act of excretion consists in the giving way, or bursting, of the wall of the cell, and the consequent evacuation of its contents. And it was supposed that Wasmann's description of the dark part of the gastric mucous membrane in the pig, as composed of columns of closed cells, gave great confirmation to these views. I stated, however, in my last lecture, that the cells described by Wasmann were contained in tubes of basement membrane

precisely similar, although somewhat larger and more complicated, than the tubes of the digestive stomach of all the mammalia.

What are the functions of these three kinds of intestinal glands? We do not possess any facts which would enable us to give a satisfactory answer to this question. The glands of the duodenum are so like the pancreas in structure, they are so strictly confined to the upper part of the intestine, with which that gland is also connected, that we cannot resist the conclusion that their function is of the same nature, and that they form part of the salivary apparatus of the upper portion of the intestinal canal.

In like manner we find connected with the oral part of the digestive tube two distinct portions of the glandular apparatus; one collected to form solid organs, the *salivary glands*; and the other diffused over the sub-mucous cellular tissue of the mouth, the *buccal glands*, forming a glandular layer very analogous to the glands of Brunner. Until we know more, however, of the change which saliva is calculated to produce in the ingesta, we cannot form any opinion of the office of the fluids secreted by what I would call *the salivary apparatus of the intestine*.

The solitary glands, and those of Peyer, so closely approximate each other in structure, that they probably are not very dissimilar in function. Do they secrete the odoriferous principle which the feculent matters acquire

in their passage through the intestine? We know that some of the cutaneous glands secrete a material, which is often quite as offensive to the olfactories, as the most fetid discharge from the bowels.

A most interesting application of the knowledge of minute anatomy to the investigation of disease was made by Boehm in his examination of the intestinal canal in cholera.

He found that the rice-water dejections were full of columnar epithelium. This was derived from the surface of the mucous membrane, which became stripped of its epithelium, as the skin would have its cuticle separated, after the application of a blister. These parts presented an appearance as if they had been deprived of the epithelium by mechanical scraping. All the regions of the mucous membrane did not suffer equally. The stomach rarely experienced any change; but the principal seat of the mischief were the ileum and the jejunum: the separation of epithelium becoming less the nearer you approached the stomach. All the involutions of the mucous membrane became affected: the tubes of Lieberkühn and the villi—the latter were swollen, elongated; their vessels much injected; their epithelial sheath so much destroyed, that only a few columns here and there adhered to them, presenting an appearance similar to that which my friend Mr. Bowman has depicted in Fig. 6, to show the effect of mechanical disturbance on the villi of the dog.

FIG. 6.



*Villi of the ileum of a dog, with the epithelium partially detached.*

Nor is the destruction limited to a scraping off of epithelium. The villi, according to Boehm, become split up into fibres, and

the follicles undergo the same disintegration; and so rapid is the work of disorganization, that he states that he had known instances in which the worst of these changes had occurred, in patients who began to complain in the morning, and were dead at noon.

And, as might be anticipated, Peyer's and the solitary glands partake in the general scraping: the vesicular bodies forming the glands were opened and destroyed: the submucous tissue infiltrated and thickened.

These effects of cholera upon the mucous membrane might be contrasted with the ravages of an extensive scald upon the skin; and the state of collapse, which is induced by the stripping of either integument, shows that similar constitutional effects follow similar lesions in both.

It is very remarkable to how great an extent Brunner's glands enjoy immunity from disease; and, in this respect, these glands present an additional point of resemblance to the pancreas, which is very rarely the seat of morbid action.

Disease of Peyer's and of the solitary glands forms a most formidable complication of two of the most serious maladies the physician has to deal with; namely, typhus fever and tubercular phthisis.

The typhoid poison has a remarkable tendency to affect the patches of Peyer's and the solitary glands; so much so as to obtain for it abroad the appellation *typhoid abdominalis*. This tendency was first noticed by an English physician, Sir John Pringle, although the priority of observation is generally attributed to Roederer and Wagler.

In a large proportion of cases of typhus, these glands are more or less altered in the ileum and in the cæcum. The subjacent tissue is infiltrated and thickened: ulcers are formed. When a Peyer's patch is ulcerated, the ulcer retains the oval shape, and has an elevated edge and hardened base.

The ulcers which result from disease of the solitary glands are small and circular. Frequently the ulcerative process attacks the coats of the intestine in succession, causing perforation.

In phthisis, similar ulcerations occur, but from a different cause. The tubercular matter is deposited in these glands, or in the subjacent areolar tissue. The ulceration is the result of the effort to eliminate this matter, as takes place in the lungs. The seat of ulceration is always in the glands; the intervening portions being only affected so far as the ulcerative process may have spread into them from the glands.

So far as my experience goes, and from what I have learned by reading of the experience of others, I believe it may be stated positively, that Brunner's glands are never affected either in phthisis or in typhus.

Let me conclude this lecture with a few observations on the innervation of the intestinal canal.

The greatest portion of the intestinal canal is supplied with nerves from one source only, namely, from the great sympathetic, from its thoracic and abdominal portions, by the splanchnic nerve and the plexuses into which it divides.

When portions of the sympathetic are examined by the microscope, they are found to consist of the same nerve-tubes, with contained white matter, as are seen in the nerves of animal life. But these tubes seem few, compared with the bulk of the nerves; and it is evident that the size of the nerve is provided for by a large quantity of areolar tissue. This is apparent from the immense number of the minute fibres of this tissue which are seen under the microscope.

After much careful examination of those nerves, I have never succeeded in detecting any other elements in them than those I have named. The peculiar organic fibres described by Remak, Retzius, Müller, and others, are, I believe, fibres of areolar tissue\*, and take no part in the manifestation of nervous action.

Whence do these nerve-tubes come? The greatest part unquestionably from the cerebro-spinal centres—the axis of all the nerves in the body: and this, I think, is very manifest when we examine the extensive and numerous connections of the sympathetic with the cerebral and spinal nerves. It is now well known that such a connection exists between the anterior and the posterior root of each spinal nerve: now the connecting branches are of that size, that they must contain several nerve-tubes, and when the great number of the sources, whence these nerve-tubes come, is taken into the account, and when we consider the small size of the trunk and branches of the sympathetic, it cannot be supposed that much room is left for fibres not immediately connected with the brain or spinal cord. If such fibres exist, they must originate or terminate in the ganglia.

In the ganglia, the nerve-tubes are brought into relation with grey matter; and here, again, we find no material difference of the structure from that of the ganglia of animal life. A more abundant areolar tissue in the former might enable an experienced observer to distinguish the one from the other; but I know of no other feature of difference.

But is there no peculiarity in the nerve-tube of the sympathetic? Undoubtedly there is, and that a very remarkable one; not of structure, but of relation; not anatomical,

but physiological: and this will be best understood if we trace the branch of communication with the posterior spinal root. This branch, as doubtless consisting of afferent fibres, derives them from the intestinal surface; proceeding from this point, we trace them to the plexus surrounding the intestinal arteries: here they intermingle with grey matter; thence they pass to the semi-lunar ganglion, where they again mix with grey matter; from that they pass by the splanchnic nerve to certain intercostal ganglia, to mix a third time with grey matter, and a fourth time, in passing from these latter into the ganglia of the posterior roots.

Here, then, the remarkable feature in these nerve tubes is the frequent communication which they form with grey matter. And doubtless this must modify, to a certain extent, their vital endowments. Nor is it improbable that their apparent independence of the sensorium results from this; and that the frequent intervention of grey matter between the central and peripheral portions of the nerve-tubes may intercept the afferent influence of one class of tubes, and afford an independent efferent power to the others, and so, by a frequent communication or connexion between those two kinds of animal matter, the co-operation of which is necessary to the development of nervous power, provision will be made for the due regulation of the parts submitted to their influence, without necessarily involving either the brain or spinal cord. Thus the actions of parts supplied by the sympathetic system alone *may* go on indefinitely without the cognizance of the sensorium, by the exercise of nervous power, developed through the reciprocal influence of the two elementary forms of nervous matter, extraneous to the cerebro-spinal axis.

Such is, doubtless, the mode in which the actions of the intestinal canal are produced. The peculiar arrangement of its muscular coat is admirably adapted to facilitate that succession of contractions and relaxations by which one portion of the canal expels what the succeeding one is prepared to receive. The peristaltic action of the intestine seems more the necessary result of their anatomical arrangement, and of the great length of their muscles, rendering it difficult that the stimulus to action should reach them all at the same instant, than of any peculiarity in the nervous influence.

It seems most probable that its muscular contractions are always due to a reflected stimulus; and that moderate distension, by the natural contents of the intestinal tube, is the usual and normal excitant. Hence, too great distension, or total vacuity of the canal, or any portion of it, are equally prejudicial to its actions; the one, by paralysing the muscular coat; the other, through the ab-

\* I have very lately found that these fibres disappear under the influence of acetic acid, just as those of areolar tissue do,—a strong confirmation of the opinion advanced in the text.



sence of the wonted stimulus. I doubt much the correctness of the common notion of a continual rhythmical action of the intestinal canal. It is true, when you first open an animal that has been recently killed, you see all the intestines in active vermiform movement, but this is owing to the sudden contact of the air with their surface. For after a time the active movement subsides, and may be excited again by stimulating the surface of the intestine, or its nerves. Drastic purgatives are powerful excitors of the intestinal movements, acting through the afferent nerves, whose influence is reflected through the efferent ones.

Anatomy proves, as I have already stated, that a considerable proportion of the nerve-tubes of the sympathetic, if not all of them, are connected with the brain and spinal cord. Physiological experiments and daily observation, both of healthy and morbid actions, confirm this fact. Valentin has found that, by irritating the dorsal and lumbar spinal nerves, which communicate with the intestinal portion of the sympathetic, increased peristaltic action may be produced. The pain which is felt from the presence of any irritating substance in the alimentary canal affords abundant proof that the nerves of the intestines communicate with the brain. And, in paraplegia from diseased spinal cord, the patient suffers from irregular flatulent distensions of different parts of the intestinal canal, consequent upon the want of tone and power in its muscular coat.

The lower part of the intestine is not only supplied with nerves from the sympathetic, but also more directly from the spinal cord by the branches of the sacral plexus. The object of this seems to be, to associate its actions with those of the abdominal muscles, whose co-operation is necessary for the act of defecation. This act is excited by the stimulus of distension in the rectum, which, acting through the ganglionic nerves, stimulates its muscular coat, and, through the sacral nerves, affects the nerves of the abdominal muscles, and causes them to contract.

The time which has been allotted for these lectures obliges me to stop here; but I cannot conclude without thanking my audience for their kind and patient attention to a rapid and imperfect review of a most important and interesting subject, and expressing my regret, that it has not been treated in a manner commensurate with its magnitude and practical value\*.

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\* This lecture was delivered Feb. 18, 1842.

## ON DETECTING THE PRESENCE OF ARSENIC,

PARTICULARLY IN REFERENCE TO THE  
EMPLOYMENT

OF

"MARSH'S TEST."

BY HENRY HOUGH WATSON.

[From Vol. VI., new series, of *Memoirs of the  
Literary and Philosophical Society,*  
Manchester.]

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IN cases of poisoning by arsenic, it frequently happens that, after death, adhering to the stomach, or interspersed in the contents of the stomach, are to be found portions of a heavy white powder, in quantity so great that it can be collected and submitted to the process of reduction by carbonaceous matter, as well as part of it exposed to the action of those other chemical operations usually resorted to on such occasions. In these instances, there is no difficulty in arriving at a positive conclusion, that the white powder operated upon is oxide of arsenic. It is not, always, however, that so much of the powder can be collected separately from the rest of the contents of the stomach as is required for its reduction by carbonaceous matter to the metallic state, or for the distinct exhibition by that agent of the characteristic alliaceous smell of the heated metal; owing to the oxide having been administered in the state of solution, or, if administered in powder, to its having become dissolved by the liquid contained in the stomach, or to its having got intimately diffused and mixed among the other undissolved matter in the stomach. In such instances, without applying a mode of testing published in the year 1836, we cannot so readily conclude as to its presence; but then have to operate upon a fluid by the application of certain tests capable of effecting known chemical changes with arsenious acid, by the power which they possess of acting upon it when in solution. Some of these tests are incapable of giving satisfactory results when the solution of arsenious acid is accompanied by one or more of many ingredients which often form a part of the contents of the stomach; and however strong our suspicions may be, it is not safe to conclude decidedly that arsenic is present when only one of the tests alluded to produces that apparent action which it ought to produce with a solution of arsenic; the least that is required is, that several of the tests should in the results of their action corroborate each other in the most full and satisfactory manner, unless by the action of one of them

alone a precipitate is obtained which can be collected, and which is so free from the objectionable part of the matter from which it has been caused to deposit, that it can be decomposed, and the arsenic contained in it be reduced to, and exhibited in, the metallic state; or its quantity being sufficient, it be capable of being caused to undergo those changes, whereby such a solution may be formed from it as will completely give all the appearances which are expected from a pure solution of arsenious acid, by the application of those tests which gave unsatisfactory results when applied directly to the fluid contents of the stomach: and it is far from being extravagant to suppose that in cases of poisoning by arsenic it may happen, or that it not seldom does happen, that the alimentary canal of the individual to whom the arsenic was administered, has become evacuated to such a degree before the occurrence of death, that, on *post-mortem* examination, the quantity of matter found whereupon to operate, is at most not greater than to allow of the exhibition, to the most skilful analyst, of a mere trace of the poison sought for.

From these remarks it will be in some degree apparent how much before the year 1836 we were wanting, in regard to our known means of testing for arsenic, a method by which we could not fail in detecting and exhibiting it, when present in very minute quantity, in such complex organic materials, as we might have to make the subject of investigation.

In the year mentioned, Mr. James Marsh, of the Royal Arsenal, Woolwich, published a mode of operating which appeared in a great degree to supply what was wanting: and, in viewing his discovery, whether we look upon the principle upon which it is based, or upon the apparatus which he used in carrying it into effect, we cannot but admire its beauty; both the principle and the apparatus being such as for simplicity will not readily be superseded, and the principle one which forbids its actions to be frustrated by the impediments offered by organic substance.\*

If diluted sulphuric acid or hydrochloric acid be allowed to act upon zinc combined with arsenic, or upon zinc in contact with a solution of arsenious acid, or other compound of arsenic, the gas generated is arsenuretted hydrogen—hydrogen holding arsenic in combination. When, therefore, Mr. Marsh has a liquor for examination which is suspected to contain arsenic, and which could not easily be

made sufficiently clear, and free from objectionable matter, to admit of being tested by the other usual means, or when he has solid matter, such as pastry, pudding, or the like, which, on being treated with water, gives such a liquor, he mixes the liquor with diluted sulphuric acid, and allows the mixture to act upon pure zinc, whereby hydrogen gas is produced, to which the arsenic is transferred, if any was present in the matter the subject of examination. The gas collected he causes to burn from a jet; and in contact with the flame holds a piece of cold window glass, or the like, on the surface of which a thin film of metallic arsenic immediately deposits when that metal was present in the matter suspected to contain it; or, having set fire to the gas as it issues from the jet, he receives the flame within a glass tube open at the ends, which becomes dimmed by a white powder, if arsenic be present. With one drop of Fowler's solution of arsenic, which only contains about the 120th part of a grain, he is able to obtain distinct metallic films. When arsenic is present in large quantity in the matter suspected to contain it, he can separate sufficient in the form of arsenious acid to enable him to form a pure solution from it, the identity of which he can then verify by the several tests usually employed, and which I have before alluded to: but, though his plan of operating is generally applicable, yet it is only indispensable to adopt it, when the poison is present in very minute quantity. Great as is the value at which we are compelled to estimate it in reference to its application where the quantity of poison present is but minute, and entangled with organic matter, there is still reason why it may have been considered incomplete, and viewed as dangerous to have been resorted to by the inexperienced operator, or even by one accustomed to general chemical practice, but hasty in arriving at conclusions from mere superficial resemblances.

Had it been the fact that arsenic is the only metal which enters into combination with hydrogen, and which is capable of being deposited upon cold surfaces, when the gas is allowed to undergo combustion, we might with propriety have concluded that when, on adopting Mr. Marsh's plan, we happened to get a metallic deposit or crust, arsenic was present in the matter under examination; but in the number for May, 1837, of the London and Edinburgh Philosophical Magazine, and Journal of Science, Mr. Lewis Thompson directs our attention to a combination of antimony with hydrogen, which he calls antimonuretted hydrogen, and points out the near resemblance which it bears to arsenuretted hydrogen. This combination is procured under circumstances similar to those under which

\* The large gold medal of the Society of Arts of London was awarded to Mr. Marsh, for his discovery. His communication is printed in the 51st volume of the Transactions of the Society of Arts, and in the 21st volume of Jameson's Edinburgh New Philosophical Journal

arsenuretted hydrogen is formed; antimony, of course, being substituted for arsenic. The smell of antimonuretted hydrogen in a great degree resembles that of arsenuretted hydrogen; and the two gases are much like each other in their general properties, as I find in corroboration of Mr. Thompson, who says, that when a piece of cold window glass is held in the flame of antimonuretted hydrogen, a metallic crust is deposited; and when a glass tube is used, the metallic film is formed on that part of the tube nearest the flame, and the white oxide around and above it, which appearances coincide in a very remarkable manner with those produced by arsenuretted hydrogen under similar circumstances; and although a practised eye may discern some difference between the crusts, that from antimony being more silvery and metallic, yet the line of demarcation is not easily drawn; for a thin film of antimony looks like arsenic, and a thick crust of arsenic has the metallic appearance of antimony: and, after showing the similarity of appearances produced by sulphuretted hydrogen upon the oxides of the two metals, and the fallacious results likely to be arrived at in endeavouring to determine which of the two is present by the ammoniacal sulphate of copper, he states that they may be distinguished by adding a drop of nitric acid to the crusts, which will dissolve them, and on evaporation to dryness a white powder be left in each instance: a little of a dilute solution of nitrate of silver being added, and the whole then exposed to the fumes arising from a stopper moistened with ammonia, the antimonial solution will deposit a dense white precipitate, whereas that from arsenic will give the well-known canary yellow flocculi: he prefers this mode of using silver to the ammoniacal nitrate of that metal, because the slightest excess of ammonia destroys the colour, but by watching the effect of the vapour, the exact quantity requisite is easily obtained. This plan, which Mr. Thompson suggests, of determining of which of the two metals a crust consists, is ingenious, and should be adopted in all suitable instances; but from experiments which I have made, I am forced to conclude that it does not always prove satisfactory—that by it indubitable results can only be obtained when the crust is very thick, or when its surface is extensive, or, in other words, when the quantity of metal deposited is considerable. When the crust operated upon is arsenic, and only a thin one, or sparing in quantity, the colour of the flocculent precipitate cannot so distinctly be perceived to be yellow as to warrant us in coming to that decision, neither can its flocculent appearance be distinctly perceived, and we cannot certify that the metal in question is not antimony: the plan, there-

fore, is in a great measure liable to the same kind of objections which are to be urged against the sulphuretted hydrogen, and the sulphate of copper tests; and I may add, that in this alleged instance of only a slight crust, there seems reason to doubt whether the result of the silver test alone, applied as described, should be allowed more forcibly to govern our decision, than the distinction to be perceived between the appearances of the crusts of the two metals under some circumstances, and particularly when they are examined by a practised eye. Indeed, Mr. Thompson concludes his communication by stating, that he fears we can only regard Mr. Marsh's very ingenious test as furnishing good collateral evidence, capable, in scientific hands, of giving very correct indications, but wholly unfit to be entrusted to those unaccustomed to careful chemical manipulation: he says this with a thorough conviction of the great utility of the test, and is only sorry that its evidence is not unequivocal.

This announcement of Mr. Thompson was the cause of a subsequent paper by Mr. Marsh, appearing in the *Philosophical Magazine* for October, 1839, in which he said he was happy in being able to lay before the readers of that journal a very simple distinguishing test for arsenic and antimony; and stated it to be as follows:—

After the common arrangements have been made for testing for the metals in question, the piece of glass or porcelain, on which the metallic crusts are generally received, is to have a drop of distilled water placed on it; it is then to be inverted, so that the drop of water is suspended undermost. The gas as it issues from the jet is to be inflamed in the usual manner; but the piece of glass with its drop of water is to be held about an inch above the jet, or just above the apex of the cone of flame: the arsenic by this arrangement is oxidised at the same time that hydrogen is undergoing combustion, and, coming in contact with the drop of water held above, forms a solution of arsenious acid, should arsenic have been in the mixture submitted to examination: a minute drop of ammoniacal nitrate of silver being dropped on the solution so obtained, if arsenic be present, the well-known characteristic lemon yellow colour produced by this test, when used for testing for that substance, is immediately produced, viz. the insoluble arsenite of silver: antimony under the same circumstances produces no change. He hopes that the process will be found to possess all the delicacy and precision necessary for distinguishing the two metals from each other, and that it will be the means of removing every doubt from the minds of experimentalists in future. I should have been glad to have been able to say, Mr. Marsh's hopes are realized; it happens on

the contrary, however, that I must give my decided opinion that the results obtained by his mode of testing ought not to be considered indubitable, since it is a well-known fact that *phosphoric acid* gives, with ammoniacal nitrate of silver, a yellow precipitate not easily distinguishable when in small quantity from that produced by arsenious acid; and I find that, by putting into Mr. Marsh's apparatus a little of a solution of antimony, and a little phosphuret of lime (or other substance capable of yielding phosphuretted hydrogen) along with the usual pure sulphuric acid and pure zinc, and without arsenic in any form, gas is produced, from the flame of which a metallic film, or crust, may be obtained; and which gas, by being allowed to burn under a drop of water, as recommended by Mr. Marsh, gives the water the property of depositing a yellow precipitate when the ammoniacal nitrate of silver is added; and, in addition to this, the gas possesses a smell resembling, in a high degree, that of arsenuretted hydrogen.

Reflecting upon the characteristic distinctions which exist between arsenic and antimony, and participating in the anxiety to remove any embarrassments prevailing against the perfection of a method of operating which presents such conveniences as Mr. Marsh's original discovery does, I have been induced to conceive that the effect of the application of heat might with success be had recourse to, in enabling us more positively to conclude of which of the two metals any crust or deposit we may have obtained is formed: and during the months of November and December last, I made repeated experiments, which, I think, proved the accuracy of the notion I entertained. Considering the readiness with which metallic arsenic volatilizes, and that it is said to be fusible at or below  $400^{\circ}$  of Fahr., while antimony requires about  $800^{\circ}$  for fusion, I thought it probable that there might be a wide thermometric range between the points at which the two metals were volatile or evaporable, and I commenced experimenting as follows:—Having procured a number of slips of window glass, each about the one-tenth or the one-eighth of an inch wide, and several inches long, I, by the aid of Marsh's apparatus, caused metallic films or crusts of arsenic to be deposited upon some of them, and of antimony upon others. I then provided a number of thin glass tubes, sealed at one end, and only about wide enough to admit the slips of window glass into them. Into one tube I put a slip of the window glass, coated thickly with arsenic, and into another a slip coated very thinly with antimony; in each case the slip being shorter than the tube, and then hermetically sealed, with a blow-pipe

flame, the orifice of the tubes. Thus arranged, the tubes enclosing the slips were immersed to a little more than the depth of the coat part of the slips (two inches and a half, the length of the tubes being about five inches), in a bulb containing rape oil in a state of ebullition. In one minute the arsenic had entirely disappeared from that part of the slip surrounded by the hot oil; but the antimony did not entirely disappear before the expiration of seven minutes. Other subsequent experiments of the same kind, corroborated the conclusion arrived at in this instance, that a very thin film of antimony was very much longer in evaporating away, by the heat given by boiling oil, than a very thick crust of arsenic. The next object was to endeavour to find a temperature lower than that of boiling oil, at which arsenic would entirely volatilize, and antimony remain permanently fixed; and about the beginning of November I made numerous experiments similar to the above, but taking care that the oil from which the heat was communicated was kept at a temperature ranging from  $490^{\circ}$  to  $500^{\circ}$ : a thermometer being all the time kept immersed in it. In some instances thick crusts of arsenic were entirely volatilized in about 14 minutes, and, in other instances, crusts less thick disappeared in about eight minutes; the length of time required for the entire volatilization depending upon the thickness of the crust; but very thin films of antimony stood the temperature for an hour, without volatilization taking place in any perceptible degree. I next conducted similar experiments at a temperature ranging only from  $355^{\circ}$  to  $365^{\circ}$ , and found very thick crusts of arsenic to be volatilized in three or four hours, thin ones disappearing in half an hour or less; those formed from gas produced by acting upon zinc with 400 gr. mea. of diluted sulphuric acid, (one volume concentrated acid to seven water) containing one drop of a solution of arsenious acid, sp. gr. 1.026, disappeared in half an hour, while those of antimony, apparently of the same density, did not diminish in the slightest perceptible degree in twenty hours; and it did not seem probable that they would have diminished, however long they had been submitted to the same temperature, that being lower than the point at which antimony begins to volatilize.

The greatest objection against my mode of operating is the tediousness attending the having to wait so long for the conclusion of an experiment, and the great care required in watching the range of the thermometer; but, I hope, this may be alleviated by substituting for oil as the heating medium, some other liquid whose boiling point is stable within the range of the temperature



required: probably a saturated solution of some salt may answer, but, at present, I am not aware of any that will.

Mr. Marsh's original discovery, *per se*, is invaluable in enabling us with ease and certainty to bring out from among organic materials arsenic, when present in very minute quantity, and in giving us the power of submitting it to ocular demonstration; but it is wanting in the capability of convincing us that what we separate, from suspected matter, having the superficial appearance of arsenic, is most decidedly in every instance that metal; it leaves us to find out by other means whether the metallic-looking substance is arsenic, or antimony, or something else. Though there may be other substances besides arsenic and antimony capable of combining with hydrogen, and of giving the flame of that gas the property of depositing upon cold surfaces dark-coloured films or crusts having more or less of a metallic lustre, yet I think it is not probable that any substance besides antimony will cause a film or crust, so nearly resembling one of arsenic in appearance and chemical properties, as to settle strong doubt upon the mind of an experimentalist accustomed to investigations, such as the one under consideration. Orfila states, that he has observed stains to result even from organic matter only; but these differed from arsenic in being less volatile, and in having none of the chemical characters of that metal. Then, since the question is only likely to be, whether or not a given metallic deposit is arsenic or antimony, I trust that my mode of applying heat, particularly in addition to the method of testing recommended by Mr. Thompson, will tend to make Mr. Marsh's discovery as perfect as it probably ever will be; and, I doubt not, that "Marsh's Test" will continue to be regarded as a valuable assistant in a chemical laboratory. I have myself often applied it successfully in determining the presence of arsenic, in small quantity, in minerals I have had under examination; in such instances, I venture to suppose no one will dispute its utility; but, in cases of poisoning, unless a large quantity of the suspected arsenical ingredient can, by direct means, be produced, it ought not to be regarded in a stronger light than capable of furnishing good collateral evidence; it must, indeed, be lamentable to consider that so much confidence should be placed upon appearances produced by its operation, as to cause a positive conclusion to be arrived at that death was caused by arsenic, when it had been needful to resort to intricate manipulation in order to detect the requisite characteristics, and when, at length, only a slight crust or film could be obtained. In cases of poisoning, no man, however high his reputation as a chemical

analyst, or as a toxicologist, has a right to be satisfied that any metallic-looking substance is arsenic, which, by the apparatus in question, he may have separated from matter suspected to contain it, unless the quantity is so great that he can verify his suspicions, not only by ascertaining the temperature at which it is volatile, but by the application of other indubitable tests.

Before concluding, I must not neglect to mention the great necessity which exists, in the application of "Marsh's Test," previously to examine with the utmost care the purity of the articles to be used. It is requisite to see that the apparatus is entirely free from arsenic; and that not only the zinc is pure, but particularly the sulphuric acid; for, at present, the sulphuric acid of commerce, as ordinarily produced from pyrites, is strongly impregnated with arsenious acid. And from facts which have come under my observation, I may add that hydrochloric acid (muriatic acid) produced through the agency of such sulphuric acid is also impregnated with arsenic. I have not yet seen any nitric acid produced through the agency of the impure sulphuric; but, probably, in such, arsenic would likewise be found.

Before using any one of the three acids, we cannot be too careful in minutely examining its purity.

In Mr. Marsh's communication to the Society of Arts, he suggests determining the purity of the zinc by putting a bit of it into the apparatus, with some diluted sulphuric acid only; and if the gas obtained, on being set fire to as it issues from the jet, will deposit no metallic film on a bit of flat glass submitted to the flame, and yield no white sublimate within an open tube, the zinc may be regarded as in a fit state for use. The purity of the zinc being known, the like process might, of course, be resorted to in determining the fitness of the sulphuric acid for use; but I will remark as a caution, that in determining the freedom of either the zinc, or the acid, or the apparatus from arsenic, it is much preferable to hold a cold substance of large bulk to the flame, from a small jet, instead of a bit of glass, for I have found that when the gas contains only an exceedingly minute quantity of arsenic, a distinct metallic deposit cannot be obtained upon a small bit or thin piece of glass, and the result of the experiment is such as would lead one to suppose that the materials are fit to be used in an investigation of poisoning; but when a cold solid substance of the bulk of several cubic inches, as, for instance, the thick end of a Wedgwood's ware pestle, is held to the flame, a dense metallic crust may be obtained: the reason of this is easily explained—the heat communicated to a small bit, or thin piece, of glass, by the combustion



of the hydrogen, soon becomes so great as to keep the arsenic in a volatile state; but a large solid substance is a long time in becoming hot, and, consequently, upon it the metal continuously, though slowly, and by little and little, deposits, until ultimately a very distinct and even dense crust is obtained. It is obvious that if this precaution of holding a large cold substance to the flame be not attended to in testing the purity of the materials, and if then, by the application of such large substance to the flame of gas produced after the introduction into the apparatus of any matter suspected to contain arsenic, a deposit of that metal be obtained, a very great risk is run of forming an erroneous and dangerous decision.

In consequence of the sulphuric acid of commerce containing arsenic, it cannot but be expected that many of the ingredients or compounds into which that acid enters as a constituent, as well as some of those of which it is not a constituent, but in the formation of which it has been employed as an agent, will be liable to be more or less contaminated with arsenic. I have detected arsenic in the sulphate of potash (commonly known in chemical manufactories under the name of "*sal enixum*"), though in the formation of this salt a considerably high temperature had been employed, which many persons probably might suppose would have had the effect of expelling all the arsenic. There is reason to expect its presence in alum, not only since such sulphate of potash as I have mentioned is used in alum making, but also as sulphuric acid is directly applied in the formation of the sulphate of alumina used. And the probability arises that food may, in some instances, be contaminated with it; alum being an article which bakers often use in admixture with the other usual constituents in the making of bread\*. Hence, in investigating whether or not, in any instance, poison has been intentionally and maliciously administered, it is indispensable, when, on testing, we certainly detect the presence of arsenic, to ascertain completely that what we detect has not had its introduction from some accidental source; no less is it the duty of a court of judicature to receive with the most scrupulous examination all evidence tendered on the subject, particularly when the quantity of arsenic detected is but small; and, from the facts and probabilities to be gathered from what I have adduced in this paper, together with the circumstance of the great lack of chemical science among the generality of the

\* It is very likely that vinegar may hereafter (when pyrites acid has got into more general use than at present) be found to contain arsenic; the manufacturers of vinegar being in the habit of adulterating it with sulphuric acid, which the law allows them to do to a limited extent.

members of the bar, I feel that I may, without hesitation, express my strong belief, that a person standing accused of having wilfully caused the death of another by poison, is far from being sure to have that fair treatment which he has a right to expect from a court whose only object is to deal out impartial justice, if the counsel employed for his defence be not assisted by the evidence or instruction of some one skilled in the principles and practice of chemistry.

### STICK IN THE RECTUM.

*To the Editor of the Medical Gazette.*

SIR,

THE case headed "Stick in the Rectum," treated in the Marylebone Infirmary, and detailed in the MEDICAL GAZETTE of the 18th Feb. last, brought to my recollection an extraordinary case which occurred many years ago in the Royal Hospital at Greenwich; but as I could not discover among my notes of cases any reference to it, I did not feel inclined, from memory alone, to draw attention to the subject. I have now, however, found the enclosed document, which was furnished to me, soon after the case happened, by a gentleman connected with the hospital, and as it explains why a stick is sometimes thrust into the rectum by ignorant people, it may probably, at this time, prove interesting to some of your readers: If you should think so, have the goodness to give it a place in an early number of the MEDICAL GAZETTE.

I am, sir,

Your obedient servant,

ARCHIBALD BLACKLOCK,  
Late Surgeon R. N.

*Copy of a Letter from Bryant M'Laughlan, Esq., Surgeon of Greenwich Hospital, to the Secretary.*

Infirmary Royal Hospital Greenwich,  
Nov. 10, 1814.

Sir,—As the Directors have been pleased to order an engraving to be made of the very accurate drawing by Mr. Lancey of the plug, and the forceps with which it was extracted, in the singular and unprecedented accident that occurred to one of the pensioners employed in Deptford Dock-Yard, annexed I beg to send you a concise statement of the case for the information of your readers.

Philip Nelson, aged 49, a native of

Brabant, who has lost one leg, and is employed in Deptford Dock-Yard, came to the infirmary on the 20th of Oct., 1814, about noon, and stated that an immense plug of wood, which he had fitted and introduced into the anus for the purpose of stopping a looseness under which he then laboured, had been, by his accidentally and suddenly falling on the end of a stool, forced into the rectum eight days previous to his applying for relief, where it still remained; and incredible as this strange story appeared to us, it was found, on examination, to be literally true. I could barely reach it with the end of my fore-finger, owing to the highly inflamed and tumefied state of the intestine, in which suppuration to a considerable extent had already taken place. He said that a sense of shame prevented his earlier making known his wretched condition, although his sufferings were excessive, accompanied with the most distressing and almost continual needing efforts to expel the foreign body from the rectum, as well as to void urine, which was done with much pain and difficulty, owing to the pressure on the bladder. The whole abdomen was considerably enlarged, and felt knotty, evidently from the long-retained and indurated faeces, none of which, as may readily be inferred from the size of the plug, could have been passed per anum. Our efforts were, of course, immediately directed to its extraction; and after repeated and persevering trials for several hours with every variety of instrument which we could procure either in this neighbourhood or in London, I found our attempts worse than unavailing, inasmuch as they could not fail to aggravate the already highly irritable and painful state of the parts. Seeing, therefore, that our object could not be effected by means of any form of instrument within our knowledge, and that the man's life was at stake, we fixed upon the plan of the forceps represented in the plate, but which, notwithstanding our utmost diligence, we could not get completed until the following day, when we happily succeeded therewith in extracting this tremendous remedy for diarrhoea, and in relieving the poor man from the most terrible sufferings. The operation was painful, and required all the force I was capable of exerting with both

hands, assisted by the counter-exertion of two of the medical gentlemen, for upwards of twenty minutes after the instrument was properly fixed upon the plug through the powerful agency of the screw. The man bore it, as well as our former unavailing and harassing attempts for his relief, with surprising fortitude.

It is needless here to detail the after-treatment of the case: it went on as favourably as we could wish. The man was perfectly recovered on the 7th November, and discharged on that day to resume his usual employment in the dock-yard.

*Note.*—Marvellous as it may seem, the man informs me, on inquiring what could induce him to have recourse to this so unaccountable mode of treating his complaint, that it is quite a common practice in his native country, and the domestic remedy in similar complaints, to use a cork on the first attack; and that, for the most part, it proves an infallible cure. A cork has been the instrument which he always used heretofore upon these occasions; but not having one at hand in his last attack, and falling in with the end of a spar in crossing the dock-yard, which he thought well suited to his purpose, he fitted it with a lanyard, which broke in his endeavour to pull it out after the accident.

#### CASE

OF

#### FEVER CAUSED BY MENTAL ANXIETY—CONVERSION INTO THE REMITTENT TYPE,

*With Profuse Hæmorrhage from the Bowels.*

By WM. ENGLAND, M.D.

*(For the London Medical Gazette.)*

MR. S., a gentleman farmer, æt. 50, of plethoric constitution, temperate habits, of much warmth of feeling and susceptibility of emotions, which were strong but well regulated, was subject for some weeks to mental anxiety, arising from the increased extent and responsibility of business. In a recent instance, being a witness to some peculiar circumstances connected with the indisposition of one of his neighbours, he evinced strong feelings of emotion, and, being obliged,

to make a journey to London, was overworked mentally and bodily.

April 23d, 1842.—First seen by his medical attendant, Mr. Weatherhead, who prescribed—

*Pil. Hydrarg. et Haust. Cathart. with saline diaphoretic mixture.*

25th.—Febrile symptoms not abated.

*Repet. Medicamenta.*

28th.—Mr. S. called on Dr. England; said he had been unwell three weeks; had experienced a rigor at the Railway station.

*Symptoms.*—Countenance expressive of great mental anxiety, fixed stare, and prominence of the eye-balls, as if the nervous system had received a severe shock; not the least pain of head; forehead not hot; no increased action of the temporal artery; skin warm, rather dry; pupils very slightly contracted, but no greater intolerance of light than usual since he had been the subject of ophthalmic inflammation last year; pulse 90, remarkably soft and feeble for a man of his physical muscular development; tongue slightly tremulous, covered with a thin white moist coat; abdomen free from pain on pressure; flatulence; anorexia; thirst; little or no sleep for the last week.

Was advised to allow his medical attendant to see him daily, to suspend all attention to business, and go to bed. His bowels having been evacuated by mercurial and saline cathartics, he was ordered—

*R. Hydrarg. Submur. gr. j.; Ext. Hyosc. gr. iij.; Saponis, gr. v.; Ft. Pil. ij. o. n. sum.*

*R. Magnes. Sulph. ʒij.; Carb. ʒj.; Pulv. Rhæi, gr. v.; Træ. Jalapæ, ʒj.; Mannæ, ʒj.; Infus. Senn. Comp. ʒij.; Ft. Haust. primo mane sum.; repet. meridiæ nisi bis respond. alvus.*

*R. Liq. Ammonise Acet. ʒij.; Potassæ Carb. ʒjss.; Nitratis, ʒij.; Spir. Æth. Nitr. ʒss.; Træ. Hyoscy. ʒjss.; Mist. Camph. ʒijss.; Aquæ Menth. Pip. ʒij.; Ft. Mist. cap. Cochl. ampla duo 6ta q. q. hora.*

30th.—Mr. S. came to Dr. E. again; thought himself better; bowels well relieved; had had some sleep; thirst diminished; other symptoms the same. With great difficulty he was persuaded to permit Dr. England and Mr. Weatherhead to see him regularly, and was

directed to remain at home the following morning.

May 1st, 9½ A.M.—Just risen, and sitting on his sofa; eighth day at least of fever; pulse soft, very feeble; no more intolerance of light than usual; not the least pain of head; temperature of scalp rather increased; tongue white, moist, thinly coated; skin hot.

*Applic. Hirud. xvi. temporibus; Lavatio frigida capiti. Habeat. Hydr. Submur. gr. j. nocte maneque. Contin. Mistura Salina.*

2d.—10 A.M., in bed; says he is much better; no cephalalgia; quite conscious and coherent; same expression of mental anxiety in the countenance; pulse 94, soft; muscles of upper extremities tremulous, not amounting to subsultus; tongue tremulous, white, moist.

3d.—Much better.

4th.—Fever diminishing; complaining of slight cephalalgia in the night.

5th.—*Repet. Hirudines xii.*

8th.—Pulse 120; tongue tremulous, soft, moist, white, not easily protruded; other symptoms more favourable; bowels moved twice with *Ol. Ricini*; alvine evacuation becoming natural; urine less high coloured; flatulence; no pain of abdomen on pressure.

Omit the calomel in the morning: *contin. alia.*

9th.—10 A.M., pulse 86; is altogether better. 1—2 o'clock P.M., profuse hæmorrhage from the bowels suddenly came on, unpreceded by any abdominal pain.

*Habeat. Haust. Cretac. c. Træ. Opii. gtt. x.; Træ. Cinnam. ʒj.; Spir. Amm. Comp. ℥xx.; 4tis. horis.*

9 o'clock P.M.—Distension of abdomen and flatulence relieved; some tenderness of abdomen on pressure.

*Applic. Hirud. xii. abdomini.*

Bowels not being moved since the hæmorrhage—*Habeat. Enema Decoct. Avenæ. cum Spir. Terebinth. Rectif. ʒij.; a fæculent evacuation without further hæmorrhage.*

10th.—No return of hæmorrhage; tongue easily protruded; moist, almost clean, no longer tremulous; pulse 94, soft; skin warm, perspirable; slight abdominal pain returning.

*Repet. Hirud. xii. abdomin.*

11th.—Skin cool, copious perspiration; pulse 90, compressible; thirst diminished; bowels not moved.

Hab. nocte Hydrarg. c. Cretâ, gr. iij.; Ol. Ric. cochl. medium cras primo mane. Habeat Haustum sequentem, when the skin is cool, until the evening.  
R. Infusi Cinchonæ, Mist. Camph. aa. ʒv.; Spir. Æth. Nitr., ʒss.; Spir. Amm. Comp. ℥xx.; Træ. Hyoscy. ℥xv. ft. Haustus.

Mr. S. continued to improve; his bowels only requiring small doses of Oleum Ricini from time to time, till the 19th, when the symptoms were—Head: perfect consciousness; no pain, nor delirium; no intolerance of light. Tongue, for the first time, dry, and of a reddish brown, thinly furred, not tremulous, well protruded. Respiration: murmur natural; respiratory acts rather slower. Heart: systole, or first sound, feeble, indistinct. Pulse 92. Voice, whispering. Abdomen: no tension; but little flatulence; no pain on pressure; alvine evacuation bilious.

Omitt. Haustus Cinchonæ;—sumat. Ammonizæ Subcarb. gr. iv.; Sodæ Carb. gr. v.; Spir. Æth. Nitr. ʒss. Lavend. Comp. ʒss.; Mist. Camph. ʒiss.; Haust. 4tis horis sum.—To have one ounce of sherry, with arrow-root, every six hours: arrow-root, with a small quantity of animal jelly, in the intervals.

20th.—Marked improvement; heart's action stronger; pulse 90, firmer; thirst almost gone; relishes his wine, arrow-root, and jelly; complains of no pain, but of great prostration of strength; tongue moist, cleaning; bowels not moved; anxiety of countenance gone.

21st, 11 A.M.—Enema, with Decoct. Avenæ. and Ol. Ric. ʒss. secured a healthy feculent evacuation, somewhat formed. Vespere: three or four bilious evacuations, without pain or tenesmus; conscious of tendency to diarrhœa; eye forebodes delirium.

22d, 9½ A.M.—General symptoms apparently better; pulse 92, firm as before; voice stronger; expresses himself conscious of gaining strength.

Vespere.—Hæmorrhage returned, but not to the same extent as the first, accompanied with fecal matter.

Omitt. Vinum. Hab. statim Haust. astringens. Sumat. Plumbi Superacet. gr. ij.; Pulv. Opii, gr. ʒ. 4tis horis. Mitte Pil. iv.

23d.—Extreme prostration of strength; pulse 120, small; tongue dry, of a whitish brown colour; quite conscious; thinks himself no worse.

To have the cordial draught without opium.

9 o'clock P.M.—In consultation with the senior physician in the neighbourhood, the following medicine was ordered:—

Hydrarg. Submur. ʒj. statim sum. cum. Haust. Mist. Camph. c. Liq. Opii Sed. ℥xx. Hydrarg. Submur. gr. x. sum. horâ sextâ matutinâ. Acidi Nitrici, ℥iij.; Acidi Muriat. ℥v.; Syrup. Aurant. ʒj.; Aquæ, ʒiss. M. sumat. 4tis horis. Lemonade with sherry; arrow-root and jelly.

The powder and draught taken about 10 P.M.

12½ A.M.—Visited by Mr. Weatherhead: pulse at wrist not perceptible; great restlessness; convulsive movements of the upper extremities; respiration very slow; frequent sighing; now for the first time thinks himself worse.

Hot water to the feet; a table-spoonful of sherry in toast and water, repeated in half an hour.

Took a small quantity of coffee. An effort to discharge flatus led to vomiting. Unconsciousness succeeded for five minutes, when he expressed himself relieved; an hour afterwards, after taking a small quantity of arrow-root, tendency to vomiting returned; a large quantity of flatus was discharged. He sunk down in an unconscious state, and died in five minutes.

REMARKS.—In the present case our attention is called to the mental origin of the fever—anxiety, and emotional feeling, acting as a predisposing if not an exciting cause; the lapse of a week or more before a regular treatment could be adopted; and the hæmorrhage, which seemed in the first instance critical, but on its recurrence further prostrated the vital powers. The notebook of every practitioner proved, prior to the numerical method of M. Louis, that in the statistics of fever the chance of assisting nature is in a direct ratio to the removal of the congestive and inflammatory complications during the first week or ten days of treatment. As with the art of the accoucheur, the management of the first stage is on an average almost every thing. After that period, the "nimia medici diligentia,"

and the empirical faith in remedies, will only lessen the chances of recovery. In the case of Mr. S. the prognosis from the first was unfavourable. There was no little probability of typhus gravior being the effect of the primary lesion of the nervous system; and considering the consequences of the mental shock, and the period of ten days having elapsed before the regular treatment of fever commenced, it is hardly probable that more active depletion could have been safely resorted to. Petechiæ did not appear during the whole progress of the case. On the ninth day of treatment (about the sixteenth of fever) came on profuse hæmorrhage from the bowels, and a remittent type was clearly developed. The perspirable state of the skin amounted sometimes to copious sweating; though through this channel no salutary or satisfactory resolution of the deceased action seemed to be effected. The hæmorrhage had the appearance of being critical or salutary; and, under the use of remedies for remittent fever, improvement continued for ten days, till the 19th (26th day), when, for the first time, the tongue became dry, and of a reddish brown typhoid character. Wine given with caution, according to the valuable indications pointed out by Dr. Stokes, produced the most marked benefit in the next twenty-four hours. The instinctive desire for wine and other aliment was a generally unerring evidence of approaching safety and convalescence. The voice, before feeble and whispering, became stronger—almost natural. The improvement of the tongue and pulse was also manifest; though the latter scarcely coming down below 90 was always a cause for suspicion.

On the evening of the 21st (28th day) tendency to diarrhœa showed itself, which was controlled by a cretaceous aromatic draught, with an opiate.

22d (29th day).—Progressive convalescence still apparent. In the evening return of hæmorrhage, though not to the same extent as the first, thirteen days previously.

23d (30th day).—Pulse 120, action without power. Death, half-past one A.M. on the 24th.

Since the admirable natural drainage of the immediate neighbourhood of

759.—xxx.

Wisbech, the remittent fever attended with profuse hæmorrhage, delineated by Dr. Robert Hamilton in his "Observations on Marsh Remittent Fever at Lynn and its Environs" (pp. 49, 50), when blood oozed out with all the secretions and excretions, have chiefly continued a subject of medical literature. The gentleman who shared with me the responsibility of the treatment from the beginning, an experienced and very judicious practitioner, had not seen a case of remittent fever strictly parallel during a residence in Wisbech of forty years. Twenty years ago I had the charge of numerous cases of fever at the edge of the low country, in the very neighbourhood where Dr. Hamilton's epidemic was most rife in 1783; but no hæmorrhagic complication of the same gravity came under my notice. The dysenteric complication, almost endemic among the half-starved poor of the Liberties of Dublin, the Cowgate of Edinburgh, and other unhealthy localities, cannot be admitted into the same category. Not having made much research into the literary records of this complication of fever, the only notice to be found in the long series of the Edinburgh Medical and Surgical Journal at all approaching to analogy, is in a lucid paper by Mr. Edmonson, on the Fever of Newcastle in 1818. This gentleman says "several cases occurred of profuse discharge of blood *per anum*. In a very few this symptom appeared to be critical or salutary; in the others it was the immediate precursor of death."

An opinion has been given that the hæmorrhagic complication in the case of Mr. S. may be the forerunner of an epidemic; but so totally altered is the physical condition of our *quondam* fen district since the time of Dr. Hamilton, that a rational hope may be entertained of our not being again visited by such a plague in an epidemic form, should sporadic causes appear from time to time and baffle our efforts.

That no post-mortem examination took place is much to be regretted.

Wisbech, May 25th, 1842.



## VARIOLA AND VACCINIA.

*To the Editor of the Medical Gazette.*

SIR,

THOUGH I believe cases of natural small-pox, occurring immediately after and even during the progress of cow-pox, are not very rare, yet, as the modifications which cow-pox undergoes when small-pox invades the constitution at the same time are very curious, I think the following case may prove interesting to many of your readers:—I inoculated Eliza Ann Jacman, a healthy child, aged five, with the cow-pox, on April 25th. I saw her again May 2d, being the eighth day of vaccination. There were three distinct vesicles on the left arm, well formed, and distended with clear lymph. The areola was just commencing to be formed. On May 5th, being the eleventh day of vaccination, the child's mother first observed an eruption on the skin, which she soon recognized as small-pox. I did not see the child till the 9th inst., when I found the face, body, and extremities, covered with numerous pustules, presenting the central depression so characteristic of the pustules of small-pox. The three vesicles on the arm, instead of being converted into hard round scabs, had suppurated, and were changed into pustules the size of a fourpenny-piece. The pustules on the face were on the turn; many of those on the extremities never perfectly pustulated; the small quantity of matter they contained being absorbed, leaving the cuticle horny and elevated for many days afterwards. Two or three days previous to the eruption appearing, the mother noticed that the child was not well; and when I saw her, the fever had not entirely subsided.

As the child had been exposed to the contagion of small-pox (cases having occurred in the neighbourhood), the germs of the disease most likely existed in the system previous to the vaccination. When the matter of cow-pox is inserted during the incubative stage of small-pox, it does not generally take effect, or the vesicle is imperfectly formed; but in this case the cow-pox ran its natural course till the eleventh day. With matter taken on the eighth day, I vaccinated a healthy infant in four places. Four vaccine vesicles were

formed, which went through the natural changes of the cow-pox. We have here, then, an example of the cow-pox taking effect while the small-pox was latent in the system, and the latter appearing whilst the constitution was under the influence of the vaccine virus. Though the experiment was not performed, few will doubt but that matter taken from the pustules on the arm on the fourteenth day after vaccination, and the fifth day after the appearance of the small-pox eruption, would, by inoculation, have produced small-pox.

After witnessing such a case, it is difficult to believe that cow-pox is only a milder form of small-pox. The ingenious experiments of Mr. Ceely have clearly proved that the human small-pox in passing through the cow is modified, and will, by inoculation, produce on man a disease entirely resembling the cow-pox; but to conclude from them, as in the able Report of the Vaccination Section of the Provincial Medical and Surgical Association, "that cow-pox and small-pox are identical, and that the vaccine disease is not the preventive of small-pox, but the small-pox itself," is drawing a wider conclusion than is warranted by the facts. Until human small-pox has produced by inoculation on man the cow-pox, or, on the contrary, vaccination the small-pox, the two diseases must be considered as dissimilar. Were they identical, analogy would lead us to expect that, at certain periods, when a very severe epidemic of small-pox was raging, inoculation of the cow-pox would sometimes produce a severer form of the disease, or, in other words, an eruption of small-pox, particularly on those exposed to the same atmospheric influences, as living in the same houses, &c. Analogy would also lead us to expect that inoculating with the cow-pox, whilst the germs of small-pox were already in the system, would shorten the stage of incubation, and determine at once a single eruption. On the contrary, we see, as in the case above related, the two diseases running a distinct course. The eruption of small-pox was, however, evidently modified by the previous vaccination.

I am, sir,

Your obedient servant,

HENRY CUBLING.

Ramsgate, May 26, 1841.

COW-POX WITH PURPURA.

*To the Editor of the Medical Gazette.*

SIR,

A DEVIATION from the usual course of vaccination has just presented itself, which, I think, deserves to be placed on record, as being, at least so far as I know, unique.

The subject of it, Mary Ann Webb, 8, Euston Mews, is four years of age, at present in good health, but she is stated by her mother to have suffered from fits, and a good deal of other indisposition, whilst teething. She was vaccinated by me May 19; and on the day following, the five vaccine vesicles, as well as the surrounding areola, were of dark mahogany redness from effused blood. On the face, neck, trunk, and extremities, were numerous large brownish red spots, resembling purpura hæmorrhagica, and there was hæmorrhage from the nares and ears.

Two other children of the same family, vaccinated at the same time, and from the same child, went through the disease in the regular way. This deserves notice, as showing that the peculiarity produced was owing to the constitution of the child operated on, and not in any measure, so far as I can judge, to the lymph used. The case is further interesting in a pathological point of view, as presenting another link in the chain of resemblance between the vaccine disease and small-pox. Whenever a case of variola appears with purpura, or petechiæ, as it is more commonly called, I look upon this symptom as a sure harbinger of death; unless it take place in a person who has been previously vaccinated, and even then the recoveries are but very few.

But we have, in the case in question, purpura artificially produced by vaccination, occurring in a subject who, if she had had small-pox in the unprotected state, would in all probability have died; yet she goes through vaccination, accompanied by this symptom, so dangerous in small-pox, without the least illness.

The areola around the vesicles, and the petechial spots, assumed a yellow discoloured aspect, as they subsided, such as we observe to succeed to a bruise.

The state of the skin and blood,

whatever that state may be, and which has not yet been satisfactorily ascertained, was no doubt such as it is in purpura and petechial fevers; but the point of interest before us is, from the purpura having been artificially brought about, and its being accompanied by hæmorrhage from the mucous surfaces, as it is in small-pox, and yet without its being marked by any indisposition whatever, further than the slight feverishness which always follows, in the stage of areola, on the 9th and 10th days after vaccination.

If the peculiarity had been occasioned by the lymph introduced into practice some time ago by my friend Mr. Ceely, of Aylesbury, by inoculating the cow with small-pox matter, and which lymph so obtained was for some time in use at this hospital, we might have supposed the case to be more nearly allied to variola, than the vaccine disease arising spontaneously is generally allowed to be; and although I am no advocate usually, or believer, of the identity of the two, still I must say that this occurrence, so far as it goes, is in favour of their being of kindred origin.

I am, sir,

Your obedient servant,

J. T. MARSON,  
Surgeon to the Small-pox and Vaccination  
Hospital, London.

June 6, 1842.

INTERESTING CASE OF SYPHILIS.

*To the Editor of the Medical Gazette.*

SIR,

THE following case appears to me to be worthy of a place in your excellent journal; if you also think that it is worth recording, perhaps you will be kind enough to insert it.

I am, sir,

Your obedient servant,  
GEORGE LOWDELL.

Lowes, June 13, 1842.

Mrs. B., a married woman, mother of several children, one an infant at the breast, directed my attention, some time since, to the state of her nipple, which was surrounded by an indolent, unhealthy-looking ulcer.

It had troubled her for some weeks, at one time appearing stationary, and

then again extending itself, and now threatening to excise the nipple; in addition to this, an eruption had appeared within the last few days on the other breast, and over the scapula, together with a large ulcer on each tonsil: there was a good deal of low fever, and, from being a strong hearty woman, she was now reduced to a distressing state of emaciation and weakness. The eruption consisted of numerous roundish spots, about the size of sixpences, of a dusky-copper colour, constituting, as plainly as possible, that form of lepra described by Bateman as arising from venereal poison.

The ulcers on the tonsils were deep, with a foul bottom and ragged edges.

The woman herself suspected the nature of the complaint, and asked me if I thought it was anything of "the bad disease;" and from her I learnt the following account.

Some weeks before last Christmas a young woman (in service, and seduced by her master), had given birth to an illegitimate child at the house of a mutual friend, Mrs. A. For some reasons unknown to my patient and her friend, she could not, or would not, suckle the child; and Mrs. B. having at the same time an infant of her own at the breast, volunteered to give it milk if brought to her house at stated times. The young woman went away from this place, leaving her infant to the care of her friend Mrs. A., who, though married, had never borne children. The infant, which was in a miserable state, died soon after the mother left; and very shortly afterwards, and at about the same time in each, both my patient Mrs. B., and her friend Mrs. A., had an ulcer appear round the nipple. Mrs. A. never having borne children, could not have suckled the present infant; and it seemed very extraordinary how she could have become diseased: but it appears that, while Mrs. B. suckled the child, Mrs. A. was the person in charge who nursed it at other times, and in the night the child several times applied itself to her nipple, and endeavoured to draw milk therefrom.

As Mrs. A. is under the care of another medical man, my account of her is necessarily imperfect; but curiously enough, when my patient consulted me on the appearance of the

eruption, she told me that her friend was also covered with one which her medical man considered syphilitic. As the case became so interesting, I accompanied Mrs. A.'s medical attendant to both cases; but the eruption of Mrs. A. was very different to that of Mrs. B., the latter being truly and decidedly leprous, while the former was papular, and covering nearly the whole body. Since Mrs. A. has recovered from the eruption, I hear she has nearly lost the sight of one eye from inflammation. I have not had an opportunity of seeing her; but cannot doubt she has had an attack of syphilitic iritis.

Pursuing my inquiries as to the state of the infant (which I remember to have once seen, and a more emaciated little being could not exist), I find that it was also covered with sores about the genitals, and at every joint. My account of the mother is very imperfect. From the medical gentleman who attended during her confinement I am told that he observed no signs of bad health: on the contrary, was struck with her fine and apparently healthy appearance. From her friend, however, I make out that about two years ago she was away from her situation on account of illness; but they were unable to make out her complaint, she telling them that the doctors said she had been poisoned. I infer that she had most likely been taking mercury, and was salivated.

Mrs. B.'s infant, which she cannot be persuaded to wean, has been ailing since its mother's illness, being better or worse, as may be with its parent, and now (June 13th) it has, on the posterior parts, a leprous eruption, exactly similar to that of the mother.

REMARKS.—Though from the appearance of the ulcer when first seen (it having then been present for some weeks, and changed in its character by various domestic remedies which had been applied) it would have been difficult to give a decided opinion of its nature, the subsequent appearance of secondary symptoms, in so very distinct a form, treated as syphilitic, and gradually yielding to that treatment, being considered as such in both cases by different medical attendants without communication with each other or suspicion of their patient, are sufficient proofs of the nature of the disease; and

the ulcer in each party shewing itself in the same situation, arising at the same time, and followed about the same time by secondary symptoms in both parties, are sufficient to satisfy the most doubtful that in both they originated from the same cause.

These points being granted, the case goes then far to shew—

1st, That a diseased infant may be born of a woman *apparently* healthy.

2dly, That such infant may, by suckling, communicate the disease to sound persons.

3dly, That the disease so communicated may be followed by secondary symptoms.

4thly, That two persons receiving the poison from the same source, and having the same kind of primary sore, may be affected with secondary symptoms of a very different character (in the present instance the one being scaly and the other papular). And,

5thly, That a disease imbibed by suckling a diseased child may be also by suckling communicated to a healthy subject.

## MIDWIFERY STATISTICS.

*To the Editor of the Medical Gazette.*

SIR,

IN the last number of your journal, which I have just received, I find a communication from Dr. Francis Ramsbotham on the statistics published in my work on the Theory and Practice of Midwifery, and, as I wish to remove the misunderstanding which has arisen, I shall feel greatly obliged by your early insertion of this reply. I should deeply regret writing any thing which might even appear to detract from the deservedly high character of Dr. Ramsbotham, senior. Most of the tables to which your correspondent objects so strongly have been before the profession more than a year, and I never before heard of such an interpretation being put upon them. I must also beg of Dr. F. Ramsbotham to believe me altogether guiltless of the presumption of placing myself in comparison with his father, any more than with Giffard, Smellie, or Perfect. Indeed, I can truly say, that no thought of any comparison between individual practitioners

entered my mind. My object in forming the tables was to collect together as many recorded facts as possible, and from them to form a double estimate; first, of the frequency of certain cases and operations; and, secondly, of their fatality. I was aware that objections might be urged against the latter inference, as, for instance, that the cases classed together were not exactly alike; that the cause of death, in many cases, was more or less independent of the operation; or that, being selected cases, they were likely to afford a preponderance of unfavourable ones, as in those of Dr. Ramsbotham, and others. I admit at once, as I have always stated, that these considerations detract from the value of the statistics; but if no attempt be made until we can comply with all the conditions, we shall be long before we have any midwifery statistics at all. I determined, therefore, in constructing the tables I have given, to include all the cases I could collect; but, at the same time, to guard against too rigid a deduction from them. In the preface to the work to which Dr. F. Ramsbotham refers, I remarked of the statistics, that, "at the utmost they afforded only an approximative estimate, owing to the drawbacks upon their exactness, and could not alone furnish us with accurate conclusions;" and again, after giving the statistics of the forceps, it is stated that "the rate of mortality exhibited by the last table is undoubtedly an over-estimate, as many of the deaths included in it were unconnected with the operation; but as this is not stated, except by a few authorities, though probably equally true of all, I have preferred quoting the numbers, and appending this note," (p. 277). This caution is repeated more than once in other parts of the volume, and the paragraph had special reference to the reports of Giffard, Müller, Perfect, and Ramsbotham. I really thought at the time that this was a sufficient safeguard. Had it occurred to me, or had Dr. F. Ramsbotham pointed out the possible mistake, after the publication of my former volume, I would have explicitly stated in the recent one that, as these cases were selections, they neither afford correct grounds for estimating the success of Dr. Ramsbotham's practice, nor for comparison with that of others.

As to the positive errors of which Dr. F. Ramsbotham accuses me, the first is rather curious: of twelve forceps cases given by his father, four were seriously complicated, and, according to Dr. F. Ramsbotham, "should not be classed as common forceps cases." Now as regards one of them, I quite agree with him; and therefore, as I suppose he would have done, I omitted it; yet he adduces it as an error. On his principle, surely the error consisted in my not omitting the whole.

Lastly, I am accused of misquoting the number of cases of ruptured uterus. I have stated that there are ten; Dr. F. Ramsbotham states that there are thirteen, of which three recovered. Now on referring to my copy of Dr. Ramsbotham senior's work, I find he gives ten cases of ruptured uterus; one of ruptured vagina; one in which the vagina was suspected to be ruptured; and three in which the bladder was ruptured; and *all are stated to have died*. Moreover, Dr. Ramsbotham, sen., in his observations on rupture of the uterus, explicitly states that "every case of rupture of the uterus, that I have seen, has sooner or later proved fatal," (vol i. p. 385.)

I cannot explain this discrepancy, except by supposing that a second edition has been published lately, which I have not seen, but which contains the additional cases. My edition is dated 1821. But even if it be so, though I am not aware of it, Dr. F. Ramsbotham must have known that I quoted the first edition correctly.

Thus, sir, I have endeavoured to explain and answer the charge brought against me; and although I feel that I have some grounds of complaint in the tone of his letter, yet I cannot but respect his motive, and therefore I beg of him to believe that, with the respect I feel for his father, it would be impossible that I should intentionally write or teach any thing calculated to "place his practice in an unfavourable light."

I have the honour to be, sir,

Your's faithfully,

R. CHURCHILL.

Dublin, 136, Stephen's Green,  
June 13, 1842.

## MEDICAL GAZETTE.

Friday, June 17, 1842.

"Licet omnibus, licet etiam mihi, dignitatem  
*Artis Medicæ* tueri; potestas modo veniendi in  
publicum sit, dicendi periculum non recuso."

CICERO.

### TREATMENT AND STUDY OF LUNACY.

THE increased zeal with which the study of lunacy is now pursued, and the increased interest felt for the insane, are strongly shown by the numerous Reports of the conduct of lunatic asylums which have been published of late years. Several of these are now lying before us. The disuse of coercive measures, and the diligent attempts made to amuse, and instruct the insane, are their chief topics; but it may be useful to examine them somewhat in detail.

At the Royal Edinburgh Asylum, 41 patients were admitted in the year 1841; of these, twenty-eight were males, and thirteen females. Twelve were married, and twenty-nine single. Of course, in so small a number, little is to be learned from the table which is given of the patients' occupations; though as years wear on, inferences may be drawn from the lists which will then have accumulated. The case which recovered after the shortest residence in the asylum was one of mania from dissipation: this patient was well in a month: the longest recovery (after four years' stay), was one of "monomania of suspicion."

Amusement is not forgotten: concerts, convivial meetings, a magic lantern, excursions to the country, and visits to public places, all contribute to soothe the inmates of this asylum. There is also daily service in the chapel; and attendance there, says Dr. M'Kinnon, forms an epoch in the day, and "tends to give a new current to



thoughts usually morbid." In eighteen months he has never found it necessary to use personal restraint in the day; and only in one case (where the patient meditated suicide) during the night. Even this he should have been able to dispense with in a differently constructed building, or with a larger staff of attendants.

The Report of the Lancaster County Asylum is dated June 30, 1841. When the present medical officers were installed in their places, sixteen months previously, they found 530 patients in the house. Diarrhœa was very prevalent, and many of the patients died of it within a few weeks. They also found 29 persons wearing either handcuffs, leglocks, or strait-waistcoats, "exclusive of between thirty and forty patients who were chained down during the day-time on seats so constructed as to answer all the purposes of water-closets, in rooms known by the appellation of the 'warm rooms:' moreover, during the night-time, all the epileptic and violent patients were chained, or otherwise secured, in bed." Every species of mechanical restraint has been abolished, not a single person having been subjected to it for five months before the date of the report. The medical officers, however, are not yet able to assert, that it can be dispensed with in every case of insanity. The removal of the instruments of coercion has improved the condition and appearance of the patients; and every precaution has been taken "to avoid substituting physical force for physical restraint." The diet, too, has been improved, its former scantiness having, probably, been, in part, the cause of the frequent diarrhœa. What *scouse* may be, we know not; but we observe that it forms the dinner six times a week in the old diet table, and only thrice in the new one.

The rules for the conduct of the chief

and other attendants, which are given at length, are judiciously framed.

The Northampton Lunatic Asylum, first opened in 1838, is supported by voluntary contributions, and the payments of the patients. The present report is of last year's date. There are five different rates of payment, varying from £1. 11s. 6d. to 9s.—per week, we suppose, but this is not stated.

In Northampton, as in other places, music has been found beneficial; and has shown that it can not only "bend the knotted oak," but the still more unyielding rigour of obstinate lunacy. Here, too, coercion had not been resorted to for the last twelvemonth.

The Second Annual Report of the Crichton Institution for Lunatics at Dumfries is dated November 1841, and embraces a period of eighteen months. Here, again, non-coercion is the rule; but one patient was restrained for three hours "for the purpose of carrying into effect directions of the physician, and of associating acts of violence and defiance with a feeling of innocence and a sense of degradation." The report is drawn up by Dr. W. A. F. Browne, the resident physician, who gives a vivid picture of the state of the asylum. One of the patients "is cunning, and treacherous, and wayward; enacts a paroxysm of frenzy when there is a fault to be concealed or extenuated; destroys his wearing apparel, falsifies every circumstance, and fulfilled the measure of his transgression, the other day, by biting off a companion's nose; and yet this man can speak and act rationally when interest dictates such a course."

Some patients are allowed to visit the theatre, the exhibition, and the races: there are concerts for the benefit of the whole house; and the Dumfries brass band plays its therapeutic part in the asylum. Every patient is encouraged in the pursuits best adapted

to his previous habits, or to the nature of his malady.

A clergyman (himself a patient) reads the service of the Church of England, reverently and correctly, to some of the patients and officers; and "when it is added that the clerk who reads the responses is likewise insane, it may be imagined that the scene is fraught with interest and emotion, and only surpassed by those which occurred in the primitive ages of the Church, when the *energumens* crept to the altar, and were healed."

This report leaves a most favourable impression of Dr. Browne's talents, and makes it easy to predict that he is destined for higher things than his present station.

A new asylum for lunatics has been just begun at Glasgow. In the inscription on the plate deposited in the foundation stone, it is stated that the directors had determined that no "mechanical personal restraint" should be employed in the treatment of the patients; and that such restraint had been already abandoned for a considerable time. A correspondent, who signs himself X. Y. Z., in the Glasgow Chronicle of June 6th, asks how long mechanical restraint has been given up in the present asylum, and hints that it was in use a few weeks ago, when the sheriff and his assessors visited the establishment. He supposes the question of renouncing the use of mechanical force, in the shape of strait-waistcoats, &c., to have been for some time settled in England; "the whim," he says, "has been generally abandoned." We rather think that X. Y. Z. has been too hasty in his conclusions, and that the system of non-coercion is very far indeed from being abandoned in England. In another paper, the Glasgow Courier of June 7th, the resident physician is praised for his mode of treatment, Mildness, amusement, and occupation.

characterize his system, and all the patients are treated and addressed as rational beings. In a subsequent number of the Glasgow Courier, appears a *reclamation* from the late superintendent, who asserts that the improvements supposed to be recent were adopted a dozen years ago. It is not necessary to decide a contest of this kind too curiously; there may be praise enough for each physician:—"let both divide the crown." The former resident may have devised the more philanthropic government of the asylum; and yet the latter one may have improved enough in the details to stamp the system as his own. Neither of them speaks distinctly of non-coercion.

Dr. Webster, in his late pamphlet, is desirous that the wards of Bethlem should be thrown open to professional students\*. He observes, that the study of insanity rarely forms part of a medical education; that this omission is often the source of embarrassment to the practitioner suddenly called upon to treat a disease which he does not understand; and, that while Esquirol was followed by a throng of fifty pupils, the physicians of Bethlem have not always their complement of three. It is not difficult to see why the wards of Bethlem should be more difficult of access than those of Guy's or St. Thomas's. The sufferings of the insane have something in them more painful, as well as more sacred, than ordinary maladies; and such patients would shrink not only from the gaze of wanton curiosity, but from the cold criticism of the note-taking student. Dr. Browne, when speaking of the pleasant aspect of the garden at the Dumfries Asylum, with its varied groups of patients, ob-

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\* Observations on the Admission of Medical Pupils to the Wards of Bethlem Hospital, for the purpose of studying Mental Diseases. Second edition. By John Webster, M.D. &c. one of the Governors.

serves, "such scenes as these are keenly relished by the public; but it is extremely doubtful whether we should risk the exposure or laceration of a single feeling or prejudice in the patients, in order to demonstrate how consonant with humanity the treatment of insanity may be. The gratification of what is a morbid curiosity may be purchased by the sacrifice of that quietude which is the first stage of convalescence; by the outrage of that retiring delicacy and consciousness of disease which are the best foundations upon which moral training can proceed."

But it may be answered, that this quotation does not refer to the visits of quiet students, but of gaping idlers.

True; but it shows the dislike of the insane to be stared at, and hints at a morbid sensibility far greater than attends ordinary disease. Nor is this intolerance of publicity confined to the sufferer. Dr. Webster himself tells us how great is the uneasiness created by the whisper, that a given patient is attended by Dr. A. or Dr. B., the eminent mad-doctors: "the very report of such a circumstance is painful to relatives, especially should the ominous carriage of one of these gentlemen be seen near the patient's dwelling. This is not an exaggeration, or a matter of indifference, but indicates a proper sensitiveness, meriting due consideration."

Nevertheless we are far from wishing the present system of exclusion to continue in all its rigour; the interests of humanity demand that a greater number of practitioners should imbibe knowledge at the fountain-head. Instead, however, of throwing open the portals of Bethlem to a mob of pupils, suppose we were to allow them to stand a-jar? Lower the fee from fifty to twenty pounds; and to prevent any interference with studies of still greater utility, let every pupil be at least

twenty-one years of age. If, at some future period, attendance at a lunatic asylum should be added to the list of compulsory studies, the fee must again be lessened; stringent regulations must be prescribed for the guidance of pupils in these asylums; and the time devoted to medical education must be extended.

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## ON THE DIVISION OF MEDICAL LABOUR.

BY ROBERT HULL, M.D.

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### *The Man Midwife.*

THE object of my previous papers has been to advocate, protect, honour, the general practitioner. To preserve him from unfair competition; to repel invaders of his territory. Far from undervaluing him, as, indirectly, ignorantly I have been charged, I have stated my belief that the surgeon-apothecaries are one of the most valuable bodies in the land. The physician, who obtrudes on this useful class, by practising surgery, is a foe whom the manly practitioner would decline inflexibly to meet. No personal interest would induce him to sanction an irregularity which would, if it became common, destroy our present division of labour, so adapted, so admirable.

Suppose a physician to settle in a provincial city, adding arbitrarily to the allowed practice; grasping the scalpel, but refusing to be the accoucheur; not keeping his "hands from picking" the sweets of surgery, but rejecting the obstetric department, which, although necessary to be occupied by somebody, he leaves to the general practitioners. Would this be equitable? For the mass of these gentlemen covet it not. To some it is so odious that they officiate in the army, they suffer in the navy, rather than act as midwives. Even the merchant-ship is preferred to obstetric practice: yet it is essential, unavoidable, in civil life.

Take the case of a master in surgery; a minute anatomist, a safe, nay, brilliant, knifeman. Not choosing to run the vast risk of metropolitan chances, he selects for residence a provincial town, with its county hospital. But in this diminutive arena his simple chi-

surgery will not afford him a livelihood. He must submit to pharmacy, however ungrand; to midwifery, however repulsive: and he earns an honourable living by the conjoint departments of surgery, pharmacy, labours. His only recompense for the subordinate performances is chirurgery. Nothing reconciles him to drugs and accouchements but the remembrance that in the provinces they are indispensable—that, in spite of them, he may still become the great operator of the district.

Now is it to be borne, that this accomplished person, who sacrifices to the necessary customs of our art, shall find a rival in any man who is not, like himself, a general performer? who invades his province, without submission to the laws; usurps the sweets of practice; selfishly leaving him the bit-  
ters; leaves him his commercial pharmacy, his time-wasting labours; deprives him of his only honours and emoluments derivable from the knife?

And how all this? By mystifying the people with the title of doctor of medicine! Harder still the case, if the doctor-surgeon should bring to his own assistance, not simple title, but official authority—through the ignorance of subscribers and the pusillanimity of officials, should secure, perhaps, in the very hospital, adorned by the surgeon, the place assigned to the pure physician; *intended for such alone*. Become physician in the hospital: operator out of doors! This has been done; and will be done again, unless the faculty set their faces sternly, and without compromise, against the common foe.

The mass of practitioners, town and country, would get rid of midwifery were it not for family-practice—an indispensable adjunct. Then, these gentlemen should be manfully protected in the whole of their departments. No one should be *met* who poaches on their peculiar, although “general” manor. The reforming leveller, who affects to believe that all distinctions are pernicious—let him demonstrate in practice what he defends on principle. But let not the man, who advocates division as at present established among us, who protests, for years perhaps, against an amalgamator—let him not, fearful of his loaves, at last surrender—*je ne puis plus*—and still expect the meed of virtuous constancy.

Principle, if it be principle, must be

defended to the last. Whatever praise may be given to men for science, they would forfeit all claim to the heroic, if, after a contest affectedly righteous, they gave way upon fears of interest; or if, having animated each other at the onset by a compact, they should slip away from the field silent, solitary, cautious.

Yet all this has been done. I have known an operating surgeon, because he possessed a medical title, to be elected physician to a county hospital. I have known the surgical staff for years refuse to recognize this irregular. Yet, after all, when he became popular and unputdownable, giving in their isolated adhesions to the conqueror, not because they had altered their sentiments, but that their pockets taught them, like nature, to abhor a vacuum.

What has occurred in one province may occur in another, might be witnessed in all, unless the spot, to which I allude, be distinguished from all others. I hope that this is the case. If not, the great principle of divided labour will receive an extensive and formidable blow, through institutions, which, hitherto, have maintained it unimpaired, and illustrated it most admirably. Fancy the mischiefs, which must result, if the offices of physicians may be filled, in the hospitals, by operating surgeons. Out of doors the public, in doors the patients, would wofully rue this novel confusion of places. The public would lose the concentrated physician; the patients would have no chance of escape from the knife. No medical veto would preserve a menaced limb; and where all the officers tend towards the cure by cutting instruments, no conjuror is wanted to foretel inevitable amputation. As it is, the physicians act as salutary checks on the unavoidable, and therefore not culpable, tendency of the chirurgic practiser, to use his peculiar processus. “Nothing like leather.”

*Midwifery*, in the former ages, even in civilized lands, was consigned to women. The fame of the Egyptian midwives, who “feared God,” will last as long as the Scripture, which records their tenderness of heart: and a passage in the *Andria* of Terence informs us that, in his days, as now, the besetting sin of the midwife was a fondness for the bottle.

Audivi, Archillis, jamdudum: Lesbiam adduci  
 jubeas.  
 Sanè Pol filia temulenta est mulier, et temeraria,  
 Nec sati digna, cui committas primo partu mu-  
 lierem.

But centuries elapsed, after the Terentian era, before midwifery was considered by authors as worthy a distinct elucidation.

"De quarto jam," saith Freind, "ultimoque ex veteribus scriptoribus Græcis, loquar. Is est Paulus, qui licet a Clerico in quarto sæculo collocetur, haud ante septimum vixit. Primus ex omnibus viris, quorum memoria ad nos pervenit, artem obstetriciam tractavit; unde ab arabibus obstetricius etiam dictus est."

An attempt has been made, recently and in this realm, to restore the ancient usage, to isolate midwifery from physic. To remand it unto women as the only legitimate wives. An absurd speculation! Because, conceding, for argument, all the evils asserted of masculine midwifery, I should still contend for greater mischiefs from female ministration.

Midwifery falls evidently within the department of surgery, or of medicine. Whichever it does, it cannot with safety be entrusted to the rude hands of persons who cannot possibly be versed in either art.

If it is said that the French belie this argumentation. I allow that this remarkable people have made an attempt to instruct a body of midwives, and I admire it. But by this endeavour it is not intended to exclude the male obstetrix. Let us, also, instruct our midwives; but gallantry, science, humanity, all demand that parturition should be mainly superintended by men, who alone are conversant with physiology and therapeutics: or ever can be.

*Midwifery* seems naturally to be involved in the chirurgic division: yet the usage of these realms allows the pure surgeon to evade it; the physician to practise it if he chooses. Let an united profession prohibit further encroachment by the physician, whom I should like to see revert to his own indisputable domain. At all events, as the Colleges of Physicians, of Surgeons, have discountenanced any other form of practisers than what now obtains, physicians, physician-apothecaries; surgeons, surgeon-apothecaries;

let other bodies and the medical public imitate their example; the prefix of Doctor to be limited to the physicians practising as such. This, the ancient arrangement, meets every difficulty; ensures fair competition; divides labour practically and scientifically; harmonizes a large class of society, and upholds the dignity of our common profession. Nor can it be violated with impunity. He who practises irregularly, whatever his skill, his income; however imposing his externals, however diffuse his popularity; loses his self-complacence. He cannot rid himself of the ever-present consciousness that he is only prosperous, not admired; opulent, not happy.

ἐχείνων ἀποτευξῇ διὰ τὸν μόνον ἐνδαιμόνια  
 καὶ ἐλευθερία περιγίνεται.

*Epictetus.*

## STATISTICS REGARDING CHILDREN.

*From a Report regarding the Workhouse of the North Dublin Union.*

By DR. KENNEDY, and DR. CORRIGAN.

*Food.*—As the children up to two years of age are all at their mothers' breasts, the dietary of the nurse attracted our attention equally with that of the infants.

Each nurse is supplied with two meals daily; breakfast at 10, and dinner at 4; the former consisting of two pounds and a quarter of thick stirabout, and a pint of sweet milk; the latter of three pounds and a half of potatoes, and a pint of buttermilk. We examined the milk, potatoes, and stirabout, and they appeared of excellent quality. A few of the nurses are allowed bread and milk, under medical direction, and they get a pint of soup at dinner every Monday and Thursday. These meals are taken in the common dining-hall, after the other occupants have dined, the children in the meantime being left in charge of some of the able-bodied females. No nurse is allowed to carry away with her, from the dining-hall, any portion of her food. From 5 P.M. to 10 A.M. is too long a period for wet-nurses to be without food, and we are of opinion that giving an evening-meal of milk-gruel about 9 o'clock P.M. is necessary to the health of mother and child; or, what might be a better arrangement, the nurses to have their morning-meal at half-past 8 or 9, their midday-meal at 2 P.M., and their evening-meal at 8 or 9 P.M., instead of the present hours. This arrangement, independently of



its promoting a better supply of parent's milk for the infant, would secure the bread and milk given out for the children being devoted to their own use.

*Children.*—The children up to two years of age are not separated from their mothers. We first examined the 28 children in the day-room. They were generally pale, with a soft flaccid state of the limbs, and the majority attenuated. A few, however, were comparatively more thriving, and more particularly two out of the five shown to us as having been born in the workhouse, (one of seven, the other eight months old). Five of the children had slight enlargement of the glands of the neck; the majority had been ailing and in hospital once or twice since their admission. Of the 23 who came into the workhouse, the mothers stated that 15 were in good health on their admission; that the other eight were labouring under disease, and two of them stated that their children had improved since admission. Of 42 children in the workhouse under two years of age on our visit, 14 were in hospital, six labouring under affections of the chest, some of them phthisical; two had diarrhoea, and two had hooping-cough; one was suffering under disease of the brain; one had slight ophthalmia, one tabes mesenterica, and one had a slight febrile attack.

The hospital arrangements for the children are defective. The children labouring under contagious diseases are not separated from other children who may happen to be in hospital at the same time: some cases illustrative of the inconvenience resulting from this came under our observation. This is a defect requiring to be remedied. Should severe epidemics make their appearance, it will be difficult to prevent them from spreading through adults as well as children. The immediate insulation of a contagious disease, on its appearance among infants, is peculiarly necessary, from the greater mortality occurring in the early periods of life.

*Morbidity and mortality of the children under two years of age.*—We found it impossible to arrive at satisfactory conclusions as to the actual amount of sickness that had occurred in the house. The want of separate wards for the children, and the difficulties necessarily attendant on the opening and formation of so large an establishment, together with the hospital books returning frequently the names of both nurse and child, where only one of them was under treatment, prevented our getting precise information on the amount of morbidity that actually occurred among the children. We give, however, the following hospital report furnished to us for twelve months, commencing May, 1840, the only period for which we could obtain a return:—

Hooping-cough	16
„ Complicated with pneumonia	6
Consumption	3
Pneumonia and consumption	2
Pemphigus	1
Pemphigus and consumption	1
Convulsions	1
Small-pox	1
Bronchitis	11
Pneumonia	6
„ Complicated with consumption	1
Diarrhoea	3
Consumption	8
Measles	1
Measles with convulsions	1
Scarlatina	9
Itch	1
Pemphigus Gangrenosus	1
Herpes	1
Teething	3
Scrofula	1
Small-pox	3
Chicken-pock	3
Ophthalmia	10
Hydrocephalus	6
Hydrocephalus with consumption	2
Remittent fever	4
Marasmus	2
Abscess	1
Convulsions	5
Febricula	1
Worms	1
Diarrhoea	8
Cholic	3
Diseases not specified	30

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The tables of mortality have, however, been accurately kept, and the following is the report handed to us:—

Total admissions from opening of house, 11th May, 1840, to 1st January, 1842	275
Discharged	129
Died	98
Remaining in house	48

which makes the proportion of those admitted, that died in the workhouse, 35½ per cent.

It is difficult to form a perfectly accurate estimate whether this mortality is above or below the mean mortality of children under exactly similar circumstances; for, with the exception of the report of the South Dublin Union Workhouse, we are not in possession of returns from any similar institution, where a constantly changing population under two years of age, the duration of residence varying from one day up to 19 months, forms an element of the question; and the difficulty is still further increased by the workhouse reports not furnishing a statement of the health of the children on ad-

mission. To afford all the means in our power of coming to a conclusion on the amount of mortality in the North Dublin Union Workhouse, we subjoin the following data and calculations, derived from various sources, of the mortality of children under two years of age.

By the report of the South Dublin Union Workhouse from its opening in April 1840, to the present January 1842, it appears that there were—

Admitted . . . . .	208
Discharged . . . . .	86
Died . . . . .	74
Remaining in the house . .	48
Which gives a mortality of 35½ per cent. on the admissions.	

The Registrar-General's reports for England have not yet extended over a sufficient period to enable us to draw any accurate conclusion from them.

The last census for Ireland is not sufficiently advanced to afford us the necessary information. The Commissioners have, however, handed to us the only returns made out, viz., from Drogheda and Tullamore, giving the ratio of deaths, in relation not to the births, but to the existing population under two years of age, for an average of five years; their return gives a mortality—

In Drogheda, of 26 per cent.

In Tullamore, of 28 per cent.

M'Culloch, in his mortality tables, gives the following as the mortality of infant life in the cities of London, Vienna, and Berlin. Of 1000 children born at the same period in those cities, there will be alive, at the end of two years, in

London, 548—Vienna, 471—Berlin, 528, giving 48 per cent. as the mortality of children under two years of age in those three great cities.

With the view of ascertaining as nearly as possible the rate of mortality among the children under two years of age in the poorest classes of our own country, we questioned the married women of the workhouse as to the total number of their children, and the proportion that died under two years of age, before their admission into the workhouse; we had the same inquiries made of the women who happened to be in the lying-in hospital, and of the women in the mendicity. Our examination included from 200 to 300 women. Of 1000 children born, 340 died within two years, being a mortality of 34 per cent. In Sweden the mortality of children under two years of age, including all classes of society, is 25½ per cent.; in France, 32½ per cent. The mortality of children varies much in the different classes of society, being far greater among the poor than the rich; the want of food

and of necessary comforts having a serious effect in destroying infant life. The mortality of the children sent from the Foundling Hospital of Vienna to be nursed in the surrounding country, has been found to fluctuate according to the plenty or scarcity of the current season. In Paris the mortality among the children of the arrondissements inhabited by the poorer classes is, at the lowest calculation, twice the mortality occurring in the arrondissements inhabited by the wealthier classes. The same has been observed throughout France: in the poorer departments one-fourth of the children die within the first year; in the richer departments only the same number die within five years.

But the mortality still increases in deserted children, who, with their other deprivations, suffer the loss of the mother's care. The reports of the Foundling Hospital of Dublin are before us for 34 years (its improved period), including from 1798 to 1831. Of 51,527 children received into the house there died in the interval before being sent to nurse 12,153, being a ratio of 23 per cent. 700 were returned to their parents, and of the remaining 38,674 sent to nurse in the country, there died under two years of age 15,252, being a mortality of 39½ per cent. on the children sent to nurse, the average annual mortality on the total number for the period of 34 years being 53 eight-tenths per cent.

The records of foreign foundling hospitals, with very few exceptions, exhibit a much higher rate of mortality than even this.

The police commissioners have placed in our hands the returns of deserted children found by the police in the city of Dublin from the establishment of the force in 1838 to the present time. In three of the divisions the average time which the children remain in charge of the police, being four days, is too short to permit us to draw any conclusion from their tables; and as the returns of the fourth division do not specify the time the children remained in their charge, we are also precluded from using them. The table of D division gives us, however, very full information.

The number of deserted children found in this division, from January 1838 to January 1842, amounted to 75, who varied in age from one day to twenty-one months, with the exception of one child aged two years and three-quarters; of the whole number 34 were reported healthy. The children were, on an average, about five months supported at nurse out of the police fund. Of the 75, 42 are dead, being a mortality of 56 per cent.

## QUALIFICATIONS OF MEDICAL OFFICERS TO UNIONS.

*To the Editor of the Medical Gazette.*

SIR,

SHOULD the following correspondence with the Poor Law Commissioners on the subject of their recent order, with reference to the qualifications of the medical officers of Unions, be deemed worthy of insertion in your widely circulated journal, I shall be obliged by your early attention to the same. It will be unnecessary for me to anticipate the observations contained in the concluding letter of that correspondence; but I must beg to affirm, in addition to what has therein been stated, that their orders, with the accompanying provisions, appear to me to be farcical in the extreme, and it requires greater powers of perception than I am possessed of to interpret their intentions, unless they be to promote party interests and purposes. Perhaps some others of your numerous correspondents will favour your readers with their views on the subject.—I am, sir,

Your obedient servant,  
T. HERBERT BARKER.

Bedford, June 15, 1842.

I.

*To the Commissioners of the New Poor Law.*

Priory Terrace, Bedford, May 21, 1842.

Gentlemen,—I beg to submit to your notice the following facts:—About six weeks ago I read of the order issued by yourselves in reference to the qualifications of the medical officers of Unions, and practising then under the licence of the Apothecaries' Company, and immediately proceeded to procure the necessary qualification, in order that there should be no obstacle to my appointment to some one district of the Bedford Union that might fall vacant.

The medical appointments to the several districts of the Bedford Union were made this day, and I have reason to believe that one, if not two, of the medical men to whom the Bedford and immediately adjoining districts have been voted, are not possessed of the double qualifications required by your order. Should the appointments be submitted for your approval, may I beg your investigation into the real facts of the case.

Should it appear that the appointment has been made but in one instance of a medical man not having qualified himself to the strict letter of the order, at the same time that application had been made by one who had subjected himself to considerable expense and inconvenience to acquire the supposed necessary qualifications, I trust you will not consider me out of my proper sphere in ap-

pealing to you for the exercise of your authority.—I am, gentlemen,

Your obedient servant,

T. HERBERT BARKER,

Member of the Royal Coll. of Surgeons, London;  
and Licentiate of Apothecaries' Company.

II.

Poor Law Commission Office,  
Somerset House, May 24, 1842.

Sir,—I am directed by the Poor Law Commissioners to acknowledge the receipt of your letter of the 21st instant, and to inform you that the representations which it contains, on the subject of the qualifications of the medical officers of the Bedford Union, will meet with the Commissioners' consideration.—I have the honour to be, sir,

Your most obedient servant,

E. CHADWICK, Sec.

T. Herbert Barker, Esq.

Priory Terrace, Bedford.

III.

*To the Commissioners of the New Poor Law.*

Bedford, May 31, 1842.

Gentlemen,—May I request the favour of your communicating to me the result of your deliberation on the subject of my letter of the 21st instant, and you will greatly oblige, gentlemen,

Your obedient servant,

T. HERBERT BARKER.

IV.

*To the Commissioners of the New Poor Law.*

Bedford, June 9, 1842.

Gentlemen,—I shall be greatly obliged by your directing your secretary to reply to my letter of the 31st ultimo. Regretting that I have occasion thus to trouble you,

I am, gentlemen,

Your obedient servant,

T. HERBERT BARKER.

V.

Poor Law Commission Office,  
Somerset House, 11th June, 1842.

Sir,—I am directed by the Poor Law Commissioners to acknowledge the receipt of your two letters, of the 31st ultimo and 9th inst. and to inform you, in reference thereto, that the Commissioners have sanctioned the continuance in office of the present medical officers of the Bedford Union.

I have the honour to be, sir,

Your most obedient servant,

E. CHADWICK, Sec.

T. Herbert Barker, Esq.

Priory Terrace, Bedford.

## VI.

*To the Commissioners of the New Poor Law.*

Bedford, June 14, 1842.

Gentlemen,—In reply to your letter of the 11th inst. I must be allowed to state that, in my opinion, your late order relative to the qualifications of medical officers of Unions is extremely inefficient and irksome.

In the first place, it is ordered that it shall not be lawful for any Board of Guardians to appoint any person to be a medical officer who shall not possess one of the prescribed series of qualifications; yet it is provided that it shall be lawful for the Board of Guardians, with your consent first had and obtained, to continue in office any medical officer already employed by any such Board of Guardians, although such medical officer may not be qualified in one of the four modes required in your order.

That the efficiency of this order is counteracted by the subsequent provision, must be obvious to every one; for what medical practitioner, already enjoying the favour and confidence of the Board of Guardians, with whom he may have co-operated from the commencement of the Poor Law operations, would subject himself to the expense and inconvenience of qualifying himself in accordance with the previous order, with such a saving clause in his favour? And yet, if he shrink from the necessary investigation into his knowledge of the practical parts of his profession, what proofs have you of his particular efficiency to treat any cases that may present themselves to his notice? Can it be presumed that in every such instance the medical officer is fully qualified to discharge the duties of his office, when he has failed to procure for himself those proofs of qualification upon which you have pretended to place so much reliance? The inevitable conclusion to be arrived at is, either that the qualifications which have been specified are valueless and unnecessary, or, if necessary, that it is not required of every individual to submit to the only means of their possession, and thus to do away with any semblance of favour and partiality.

The provision for the appointment of a medical officer not possessed of the required diplomas, when the fully qualified practitioner cannot be found to take office, was undoubtedly a necessary one; but surely, under the reverse circumstances, it cannot be just to lay aside the claims of the thoroughly qualified candidate, and assign to the office one who has failed to possess himself of the required testimonials: and what extenuating circumstance can be found in the case of the unqualified, which cannot be met by equal, if not superior, claims on the part of the fully qualified practitioner?

That your late order is extremely irksome

there can also be no doubt, inasmuch as it is an order which is binding only upon a portion of the medical community, and that portion in by far the most disadvantageous position; for the provision favours those already virtually in possession of the offices, to the exclusion of those who may imagine themselves in a superior position, from having procured the extra qualifications.

No culpability can attach to the several Boards of Guardians for appointing men in whose medical and surgical skill they place implicit confidence, and who may have served them faithfully for a longer or shorter period since their existence as a deliberating body; but if the appointment rest with themselves, what necessity can there have been for the interference of another power, and the interposition of another order, especially when that power is rendered merely nominal, and that order completely nugatory, by a subsequent provision which leaves the power where it originally existed?

In conclusion, gentlemen, if it had not been from a firm conviction of the reasonableness of the views and observations herein contained, and of the appropriate application of the question *cui bono* to your late order and provisions for medical qualification, I should not have been induced again to intrude myself upon your notice.

I am, gentlemen,  
Your obedient servant,  
T. HERBERT BARKER.

## ROYAL COLLEGE OF SURGEONS IN LONDON.

THE Council of the College, desirous of furnishing to the public a correct List of their Members, request that each member will be pleased to transmit to the secretary, between the 1st of June and 1st of July in every year, by letter, a statement containing his name, address, and date of diploma, in his own hand-writing, in order that it may be compared with the Chronological List.

The President and Council, in publishing the corrected List of the Members of the present year, with the Date of each Diploma, regret that so many members have omitted to make the return requested by the Council. They are anxious to explain to the members that the object of this Annual Registration is to furnish the Judges, Magistrates, Clerks of the Peace, Poor Law Commissioners, Boards of Guardians, and the public generally, with a correct list of qualified surgeons, in order to prevent the various impositions which have been practised upon them by ignorant pretenders and other unqualified persons.

The names of all members who shall not have registered themselves previously to the

month of July 1843, will be omitted in the corrected list of that year.

The President and Council particularly wish to intimate to all public functionaries, that no diploma can be genuine in which there is any erasure, interlineation, or other alteration.

N.B. The Corrected List for 1842 may be purchased at the College for one shilling.

EDMUND BELFOUR, Sec.

June 14, 1842.

#### PROFESSOR OWEN'S LECTURES.

The second and concluding lecture on the Fossil Remains of Extinct Animals, will be delivered in the theatre of the College, by Professor Owen, F.R.S., on Wednesday, the 6th of July, at nine o'clock in the evening.

Tickets of admission will be delivered to members of the College upon personal or written application to the Secretary at the College.

By order,  
EDMUND BELFOUR, Sec.

June 14th, 1842.

#### RECEIVED FOR REVIEW.

Second Annual Report of the Crichton Institution for Lunatics, Dumfries. Nov. 1841.

Rules of the Society for the Benefit of the Widows of the Officers of the Hospital and Regimental Medical Staff of her Majesty's Army.

Observations on the Admission of Medical Pupils to the Wards of Bethlem Hospital, for the purpose of studying Mental Diseases. By John Webster, M.D. &c. one of the Governors. Second edition.

Observations on the Draft of a Bill for the Regulation and Support of Medical Charities in Ireland. By Robert Harrison, M.D. &c., and D. J. Corrigan, M.D. &c.

Dr. Tavernier's Treatise on the Treatment of Deformities of the Spine, by the "Lever-Belt with inclination Busk," without Extension Beds, or Crutches. Translated by W. Brewer, M.D. London.

#### ROYAL COLLEGE OF SURGEONS.

##### LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, June 3, 1842.

S. C. Mason.—T. Vallance.—T. Ballantine.—C. W. Currie.—F. Goolden.—H. Bell.—J. E. Smyth.—G. Harday.—A. K. Maybury.—S. Moriarty.—J. W. Mason.

Monday, June 6, 1842.

W. Hill.—C. W. Tilly.—G. Saunders.—S. J. P. Parker.—R. N. Willis.—T. S. Parke.—N. F. Davey.—C. T. Staples.—T. Ingham.—M. B. Lefebure.—J. Yate.—R. Haines.

#### APOTHECARIES' HALL.

##### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, June 3, 1842.

T. Leonard.—S. W. Rayne.

#### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, June 4, 1842.

Small Pox .....	3
Measles .....	27
Scarlatina .....	25
Whooping Cough .....	28
Croup .....	6
Thrush .....	2
Diarrhoea .....	2
Dysentery .....	0
Cholera .....	0
Influenza .....	3
Typhus .....	16
Erysipelas .....	7
Syphilis .....	1
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	129
Diseases of the Lungs, and other Organs of Respiration .....	230
Diseases of the Heart and Blood-vessels ....	18
Diseases of the Stomach, Liver, and other Organs of Digestion .....	30
Diseases of the Kidneys, &c. ....	6
Childbed .....	8
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	4
Rheumatism .....	1
Diseases of Joints, &c. ....	1
Ulcer .....	0
Fistula .....	1
Diseases of Uncertain Seat .....	108
Old Age or Natural Decay .....	68
Deaths by Violence, Privation, or Intemperance .....	20
Causes not specified .....	1
Deaths from all Causes .....	700

#### METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude  $51^{\circ} 37' 32''$  N.  
Longitude  $0^{\circ} 3' 51''$  W. of Greenwich.

June	THERMOMETER.		BAROMETER.	
Wednesday 8	from 49 to 77		30.22 to 30.28	
Thursday . 9	47	74	30.21	30.18
Friday . . 10	46	77.5	30.11	30.10
Saturday . 11	48	80	30.15	30.22
Sunday . . 12	50	81	30.27	30.30
Monday . . 13	48	78	30.30	30.19
Tuesday . 14	52	78	30.12	30.06

Wind, N.E. on the 8th, and three following days, also on the morning of the 12th; S.E. on the afternoon of the 12th; N.E. during the greater part of the 13th; E. by S. in the evening; on the 14th very changeable.

Generally clear till the afternoon of the 14th, when distant thunder and lightning brought a little rain to the amount of little more than five thousandths of an inch.

CHARLES HENRY ADAMS.

ERRATUM.—In Dr. F. H. Ramsbotham's letter, page 437, col. 1, line 18, for "volume," read "volumes."

WILSON & OGILVY, 57, Skinner Street, London.



# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL  
OF

Medicine and the Collateral Sciences.

FRIDAY, JUNE 24, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Albuminous urine. Means of detecting the albumen. What it imports. Anatomical characters of Bright's kidney. Symptoms to which this renal disease gives rise. Nature of the affection.*

ANOTHER morbid condition of the urine, imperatively demanding your attention, is that in which it is habitually impregnated with *albumen*. This albuminous condition is much more common, and in general not less serious, than the saccharine condition which I described yesterday.

There is no albumen in healthy urine. Neither can we recognize its presence, in any urine, by mere inspection. We detect it by certain tests: and I will tell you, in the first place, what these are; and how to use them.

Albumen — of which we have so familiar an example in the “white” of eggs — begins to pass from the fluid to the solid state at the temperature of  $160^{\circ}$  *Fahrenheit*. When diluted it may require for its complete coagulation the heat of  $212^{\circ}$ . Hence one simple and easy test of its presence. We discover that albumen is contained in the urine, by heating that fluid to the boiling point. This is most conveniently done in a small glass tube, by the flame of a spirit lamp. It is seldom that any preparation of the suspected urine is requisite. It may, perhaps, be hazy in consequence of its containing *mucus*; and if its transparency be much troubled, it will be well to filter the fluid before testing it. When,

as sometimes happens, albuminous urine is already turbid from the presence of the lithates, these dissolve as the heat is applied, and the urine first becomes clear; and then, as the temperature rises, the albuminous opacity begins to be visible.

The phenomena observable in the heated urine vary in different cases, chiefly by reason of the variable amount of albumen. The whole is sometimes converted into one gelatinous mass: but this is uncommon. Usually the albumen first appears in the form of a whitish cloud, of which the constituent particles multiply, and collect, in proportion as the quantity is considerable, into small curdy fragments or flakes. These soon subside to the lower part of the tube, leaving the supernatant liquid clear. The amount of albumen is of course to be estimated by the portion of the tube that it occupies.

Now this test, by heat, is not conclusive, nor sufficient. There are circumstances that may impede or prevent its effect in coagulating albumen, which, nevertheless, is present. On the other hand it may, under other circumstances, produce a fallacious appearance of albumen where none exists.

Albuminous urine has often a less acid reaction with litmus paper than healthy urine. The reason of this I will explain presently. When recently discharged from the bladder the urine may be neutral or even alkaline; or it may become neutral or alkaline, by spontaneous decomposition after it has left the bladder. In any case, the urine thus alkaline or neutral will not coagulate when heated, even though it may be full of albumen. Again, although there may be no albumen, heat may cause a flaky precipitate, consisting of the earthy phosphates.

We avoid, or remedy, these sources of fallacy, by testing the suspected urine with nitric acid also, which has the property of precipitating the albumen in a flaky or pulpy form. It will thus detect albumen when the tested urine is alkaline; and by restoring its acidity, it will make the albu-

men discoverable by the test of heat. It has likewise the effect of redissolving the spurious precipitates which may be thrown down by the application of heat, and consequently of shewing that they *are* spurious.

Nitric acid alone, however, is not, any more than heat alone, an unequivocal touchstone of the presence or absence of albumen: for it may occasion a flaky precipitate of lithic acid, when there is no albumen. But this defect is compensated by the complementary criterion of heat; the precipitate being redissolved by raising the temperature of the urine, while any coagulated albumen remains insoluble.

Dr. Christison states that, in his experience, "sometimes nitric acid added in excess did not separate albumen which had been present in large quantity"—a fact which he thinks "is probably to be ascribed to the albumen itself having undergone more or less decay, along with the other principles of the urine." Hence the urine should, if possible, be examined before it has become decomposed by lapse of time. If, however, you employ both these tests with different portions of the same urine at the same time, and with the same portion in succession, you will avoid all risk of mistake.

Other tests there are, frequently spoken of, and sometimes recommended: particularly the ferrocyanate of potass, corrosive sublimate, creasote, and oxalic acid. They are unnecessary, in addition to heat and nitric acid; and they are liable to fallacies from which these last, when combined, are free. Unless you are expert chemists, you had better avoid them.

Now it is quite certain that the presence of albumen in the urine does often accompany and bespeak a very serious organic disease of the kidney. For this disease we have no appropriate name. I wish we had. Some call it *granular degeneration* of the kidney, but the epithet granular is not always applicable. It is most familiarly known, both here and abroad, as *Bright's kidney*, or *Bright's disease*; after the eminent physician who, in 1837, first described it, and shewed its great pathological importance. These are odd sounding and awkward terms; but in the lack of better I must employ them.

It is very difficult to describe, in words, the anatomical characters proper to this renal disease; for they are neither very definite nor very constant. The description that I am about to attempt will be made more intelligible by Dr. Bright's plates, and those of M. Rayer, which are both before you.

The morbid appearances presented by the substance of the kidney are such as denote some change in its intimate structure. Its

cortical (or secreting) portion is the primary and chief seat of this degeneration; yet what is called its medullary (*i. e.* its excreting) part, is also sometimes implicated, but in a less degree.

These morbid appearances relate to the size, figure, and consistence of the kidney; to the colour and condition of its surface, and of its interior. With respect to some of these points there is much variety in different cases; and studying this variety under the light which is thrown upon it by the clinical history of the disease, we have reason to believe that it is connected with different stages of the disorganizing process. Thus if we look to the *size* of the diseased organs, they are sometimes much larger than natural, sometimes of the ordinary magnitude, sometimes considerably smaller. The average weight of the adult human kidney is four ounces. M. Rayer has met with some, in this disease, weighing twelve ounces. Both the increment and the decrement of the natural bulk belong principally, if not altogether, to the outer secreting portion of the gland. If a longitudinal section of the exaggerated kidney be made, its cortical part is seen to be unduly broad: and the same part is disproportionally narrow when the whole organ is smaller than common. For this reason, in the latter case, the radiating medullary portions approach nearer to the surface than they are observed to do in a healthy kidney. And it furthermore appears that the enlargement is most commonly coincident with the earlier, and the contraction or shrinking with the later, stages of the renal disease.

The *consistence* of the diseased gland is variable also. Sometimes, and for the most part in the earlier periods, it is soft and flabby: sometimes, and especially in the later periods, it is remarkably compact and hard. The size and the consistence of the kidney are, in most cases, inversely proportional to each other.

Again, the *form* of the kidney, in the disease in question, often undergoes some modification. As the special change proceeds, the exterior of the gland shews a tendency to become indented by linear depressions, and to present a lobular shape. This, however, is by no means a constant phenomenon, even in the most advanced stage of the malady.

When its proper investing tunic is stripped off—and less distinctly *through* the same tunic, before its separation—the surface of the kidney appears mottled, marbled, or stained; of a yellowish grey colour in one place, and of a dark or purple tint in another; occasionally it is pale throughout its whole extent; more commonly of divers hues, and variegated with little streaks, which are portions of vessels containing red

blood; sometimes the surface is curiously speckled, often uneven as if strewed with prominent grains, in some instances quite rough and scabrous. These several unnatural appearances are usually the more conspicuous, in proportion as the complaint is the more advanced.

The most uniform, however, and the most characteristic of the morbid appearances, are those presented by the cut surface of the kidney, when it has been divided into two symmetrical portions by a longitudinal incision. We then perceive that the cortical substance is the main seat of the morbid alteration. It has lost, in a greater or less degree, its proper red colour and uniform aspect. Sometimes it puts on a speckled or granular appearance; but this, in my experience, is less common than a pale, nearly homogeneous surface, somewhat like the section of a parsnip. Its natural striæ are confused or obliterated. The incised surface gives one the notion of some deposit, whereby the original texture of the part is obscured. The blood-vessels seem, many or most of them, to have been emptied by compression, or to be blocked up by yellowish solid matters; while the healthier pyramidal masses belonging to the medullary portion of the kidney are displaced, and pushed aside, or encroached upon, by the same yellowish matter, which sometimes interposes itself between, and opens out, their radiating tubuli. Together with these changes of appearance and structure, I have several times found the veins that emerge from the kidney firmly plugged up by coagula of blood.

In some rare cases the kidney is studded, both on its surface and throughout its interior, with numerous small cysts or cells, containing a thin transparent liquid. These cysts have been inaccurately termed hydatids. It is not at all uncommon to meet with one or two such cysts in this diseased state of the organ.

It has been made a question whether the various appearances which I have been attempting to describe, and which sensibly differ in degree and combination in different cases, are characteristic of different morbid conditions, or merely of different stages and varieties of the same essential change. Our knowledge of the subject is scarcely sufficient to supply a positive solution of this question. Excepting perhaps the cysts, my own *opinion* is, that they are all accidental forms and effects of one and the same morbid process. At the same time I ought to tell you, that both Dr. Bright and Dr. Christison appear to incline to the opposite conclusion.

There is still another state of the kidney, very different to the eye from any that I have yet mentioned, but which has been thought, and which I think, to be, in some cases at least, the first stage of all in the dis-

organizing process. This state, which I referred to when speaking of suppression of urine, may be briefly described in two words—*sanguine congestion*. The whole organ is gorged with blood, which sometimes drips freely from it when it is cut open. The kidney is in general large, somewhat flabby, of a deep dark red, even of a chocolate or purplish colour, nearly uniformly diffused, except that the cut surface is usually diversified by still darker tuft-like spots, which have been ascertained to be the Malpighian bodies filled with blood. This change from the natural appearance of the kidney is evidently of a recent kind; and the symptoms that have been observed to belong to it are these:—Fever, preceded often by rigors; uneasiness or dull pain in the loins; nausea and vomiting; a very scanty secretion of urine, which is sometimes tinged with blood, and always albuminous; occasionally complete suppression of urine. To these symptoms there is presently added, in most cases, sudden and general anasarca—what is commonly called inflammatory, active, or febrile dropsy. If the secretion of urine be entirely suspended, death soon ensues by coma, as I explained to you yesterday; but if not, the disorder is frequently fatal by the supervention of some acute internal inflammation; pleurisy, or pericarditis, or pneumonia, or peritonitis. Many persons recover completely from the condition expressed by this combination of phenomena. Many seem to recover, but bear about with them the germs or beginnings of those more chronic and latent changes which constitute “Bright’s kidney.”

And what are the signs which indicate, to an instructed eye, the presence of those changes? Some of them are precisely the same, in kind, as those which denote the acute disorder; only mitigated in degree, and of slower march and succession. The patients are subject to obscure lumbar pains; to sickness from time to time, and retching; and their urine is apt to be red, brown, or dingy, as well as albuminous, from the intermixture of some of the colouring matter of the blood. They are obnoxious to inflammations of the serous membranes also; and more particularly to head affections, of which they often die; drowsiness, convulsions, apoplexy. And, to finish the resemblance, many of them, aye, most of them, become at length anasarcaous. Besides these symptoms there are others which are not seen in the acute malady; because it is acute. Gradually increasing pallor is almost constant; disease of the heart is common; and the skin, in general, even in the absence of fever, is remarkably dry and unperspiring. The patients are troubled by a frequent want to make water; by flatulence of the stomach and intestines; and by caprice of the bowels,

which are sometimes obstinately costive, sometimes prone to diarrhoea.

Now it is worth your while to remark, with respect to this category of symptoms, that (the state of the urine excepted) they have no special, *primâ facie*, reference to renal disease. They are all common enough in various other complaints. In truth they are mere secondary consequences of Bright's disease; and in so far as they are symptoms of it, they are *indirect* symptoms. Before Dr. Bright no one perceived, in such symptoms, any indication of disease of the kidney. The primary and fundamental organic malady reveals itself by no direct symptoms, excepting those which are furnished by the urine.

Seeing, then, that this peculiar disease of the kidney is coupled with effects so grave and perilous, and seeing that one of its most positive and distinctive marks is an albuminous state of the urine, two questions of great interest at once present themselves.

1. Does albuminous urine *always* imply the presence of Bright's disease?

2. Is Bright's disease, when present, *always* accompanied by albuminous urine?

To both these questions the answer is—no.

It is certain that some articles of food have the effect in some persons, of rendering the urine for a time albuminous: perhaps it would be more correct to say that certain forms of indigestion cause this change. Albumen has also been detected in the urine under that general state of irritation produced occasionally by mercury, or by a blister to the skin. In the crisis of some febrile disorders, and in some cases of pregnancy, the same phenomenon has been observed. Whenever blood, proceeding from any part of the long tract of mucous membrane which lines the urinary organs, mingles with the urine, that fluid of necessity contains albumen, and coagulates if tested by heat or by nitric acid.

On the other hand, when the kidney is really affected in the way already described, the admixture of albumen with the urine is apt to disappear, for a while, even suddenly. I have known it vanish for several hours, immediately after the effectual application of a hot air bath; and after profuse purging by a full dose of elaterium. Sometimes it is absent for a longer period.

Another important question, therefore, now arises. Finding albumen in the urine, how are we to know whether it does, or does not, indicate the presence of Bright's kidney?

We may judge, in part, by frequently testing the urine, and noticing whether the albuminous impregnation be transitory or persistent. In part also we judge by the absolute amount of the albumen in a given measure of urine. If the water be deeply charged with that unnatural ingredient, the presumption is strong that the kidney dis-

ease is in progress; and when that disease is confirmed, another remarkable change is found to have taken place in the urine. Its specific gravity is very low; and strikingly in contrast with that of diabetic urine. This is therefore a very strong additional diagnostic circumstance.

On Dr. Prout's authority we have assumed the specific gravity of healthy urine to range between 1015 and 1025. Other writers make it higher. But the urine voided in Bright's disease is sometimes as low as 1004; and its mean specific gravity does not exceed 1013.

I need scarcely again remind you, that the question of specific gravity must always be viewed in relation to the absolute quantity of urine secreted. The specific gravity depends, of course, upon the proportion of the solid constituents of the urine contained in a given quantity. If the aqueous portion be augmented, the effect upon the absolute density will be the same as if the solid contents were proportionally diminished. But when, as frequently happens in certain stages of this renal disease, the specific gravity decreases while the quantity of the urine decreases also, that conjunction of phenomena becomes especially significant.

The density of the urine being thus unnaturally low, notwithstanding the addition of the new substance, albumen, it follows, as a matter of inference, that the solid constituents proper to healthy urine must be sensibly diminished: and they are found, in fact, to be so. These solid ingredients consist mainly of urea, and of certain salts. The aggregate solid contents amount, in health, to 67 or 68 parts in every 1000. In Bright's disease the amount has been ascertained to be diminished to 12 or 14 parts, and even, in an extreme case, to less than this—to about 6 parts.

The urine contains, then, albumen; and it is deficient in urea. These two facts suggested, naturally enough, to M. Solon, and to others, the notion that the albumen might be formed, by a sort of conversion, at the expense of the urea; since these substances, by a slight alteration in the ratio of their elements, pass respectively each into the other. But it is not so. Dr. Christison had observed many years ago, that when the urine was deprived of the greater part of its urea, the quantity of albumen contained in it was small: and, on the other hand, in cases where the urea was considerable in quantity, the albumen was plentiful also. In a recent work on this subject, the same physician states that the whole of his subsequent experience has been in conformity with this observation.

It being certain, therefore, that the albumen is not vicarious of the urea, what (you may ask) becomes of the urea? It is de-

tained in the blood ; and may readily be recognized there in considerable quantity : and herein lies, as I conceive, the secret of the secondary affections which belong to this disorder, and of its great fatality. The body is poisoned in detail by the retention of its own excrements. The blood not being duly purified through that great emunctory, the kidneys, is spoiled for its purpose of nutrition. Besides containing urea, it undergoes other and more manifest changes. Its proportion of fibrin varies ; and it gradually becomes poor in colouring matter ; the serum is less albuminous also, and of a lower specific gravity, than in health. The quantity of albumen in healthy blood averages from 65 to 69 parts in 1000. In this malady Dr. Babington has found it reduced to 16 parts. The average specific gravity of healthy serum is 1030 : but in Bright's disease it descends to 1024, 1020, and even to 1013. Now Dr. Christison has made out the very interesting fact, that there is a definite inverse ratio between the coagulability of the urine, and the density of the serum. The more albumen there is in the former of these fluids, the less is there in the latter, and the lower is its specific gravity. So that the deficiencies of the one fluid balance the superfluities of the other. All this is very different from what takes place in diabetes, in which sugar is excreted with urine that is otherwise healthy : whereas, in Bright's disease, urea which ought to be discharged, remains in the blood ; and albumen, which ought not to be so separated, is taken from the blood and carried out with the urine.

I have now described the changes presented by the kidneys in this disorder, the symptoms which attend it, and the morbid conditions both of the urine and of the blood. But these all vary and fluctuate at different periods of the complaint. I must next, therefore, endeavour to state what has been ascertained of its course and progress.

When the chronic disorder is not a legacy left by the more severe and acute form of disease which I have termed febrile dropsy, it is apt to creep on very insidiously, and to escape our notice : and its history is not yet fully known. It will be enough if I distinguish two stages of the malady—the early, and the advanced.

In the early stage the urine is generally scanty. Instead of about 40 ounces in the twenty-four hours, the patient voids 16, 12, 8, or even so little as 2 or 3 ounces. Sometimes the secretion is nearly or quite suppressed : and then the head seldom fails to become affected in the way already described. The urine has also an unnatural appearance. It is red, or dark, obscurely turbid, like muddy beer. It froths more than usual ; and if you blow into it through a tube, you

raise bubbles similar to those which may be formed in soapy-water. Its specific gravity is somewhat, yet not greatly, reduced ; about 1021, perhaps ; it is seldom at this period so low as 1016. It contains an abundance of albumen.

At the same early period, blood drawn from the arm exhibits the buffy coat. The serum is much diminished in density, and contains a considerable quantity of urea. There is no decrease in the fibrin ; perhaps it is a little augmented : and there is no great change in the amount of colouring matter.

In the more advanced stages of the disease, the quantity of urine is frequently not below the standard of health ; and it sometimes considerably exceeds that standard, so as to constitute one variety of chronic diuresis (*anazoturia*), which some call diabetes insipidus. It is usually pale, slightly opaque, and of a very low specific gravity ; 1014, 1010, 1007. Once, when the quantity of the urine was *not* in excess, Dr. Christison found the specific gravity to be no more than 1004. There is a corresponding reduction in the natural solid ingredients of the urine. Albumen, too, is present, but more uncertainly than in the earlier periods : fluctuations in this respect are more common than before. It is a mistake to suppose that the amount of albumen increases as the disorder advances. The contrary rule would be more near the truth. In general the albumen is plentiful and almost constant in the outset of the malady ; less surely present as it proceeds ; and sometimes entirely absent in its latter periods : and it is of importance to remark that the alteration in the specific gravity follows the opposite law. The declension of density, so far from being corrected, augments with the progress of the disorder. Hence the one of these morbid phenomena is a valuable check upon the other, considered as an index of what is going on in the kidney.

And another fact, which it is essential for you to know and to remember, is, that, in any stage of the disease, the supervention of febrile disturbance, from local inflammation or whatever other cause, tends to renew, for the time, those qualities of the urine which belong to the early period.

Meanwhile, the disease advancing, the serum of the blood recovers more or less its lost specific gravity, in proportion to the decrease of albumen in the urine. The quantity of fibrin seems, in some cases, to diminish. But the striking and most characteristic change is the rapid disappearance of the colouring matter, the hematosin, as it is called. This may at length be so much reduced, as to form less than a third of the healthy average. If venesection be occasionally employed, this process of deprava-



tion is accelerated; but it takes place whether blood be artificially withdrawn from the system or not. "I am acquainted," says Dr. Christison, "with no natural disease, at least of a chronic nature, which so closely approaches hæmorrhage in its power of impoverishing the red particles of the blood." Hence the peculiar pallid or dingy hue of the patient's skin; the leuco-phlegmatic and even waxy aspect which invariably stamps the victims of this complaint.

These characters, then, of the urine and of the blood, when rightly compared and interpreted, reveal not only the existence of the renal disease, but also, with much probability, the stage or degree that it has reached.

Let us next review, a little more in detail, those secondary affections which I have already pointed out as being incidental to the subjects of this renal malady. They are of much consequence: for, in the course of the disease, more or fewer of them are almost sure to occur; most of them are productive of very serious distress; and some of them place the patient's life in immediate jeopardy, and often bring it to a premature end. Moreover, it is by these secondary affections that our suspicion of the primary disease upon which they depend is, in general, first awakened: and it is to the prevention or the removal of these same secondary affections that our curative endeavours must chiefly be directed.

The most common, and practically the most important, of them all, is anasarca; but of this, although I mention it first, I shall postpone, for a while, the farther consideration.

Another very common, and very important secondary complication, is the occurrence of what we compendiously call *head symptoms*; various manifestations of derangement in the cerebral functions; headache, drowsiness, delirium, epileptic seizures, apoplexy. So frequently indeed is the death of the patient preceded by coma, with or without convulsions, that Dr. Christison considers this to be the "natural termination" of the disease, or "the mode in which it proves fatal when life is not cut short by some other incidental or secondary affection." Of 70 fatal cases observed by Dr. Bright, death was ushered in by well-marked cerebral symptoms in 30.

I have already told you the circumstances under which these affections of the brain usually arise. They almost always follow any great diminution, or the entire suspension, of the secretion of urine. But this rule is not so strict as to admit of no exception. Occasionally, but I believe very seldom, the urine, in this disorder, is reduced to a very small amount, while the head remains undisturbed. Of this Dr. Christison

has recorded a remarkable instance. One of his patients voided no more than two ounces of light urine daily, for nine days before his death; yet he continued sensible to the very last minute of his existence, and died simply of inanition. Sometimes apoplectic symptoms occur, and carry the patient off, although there has been no extreme or material reduction in the quantity of urine.

Now when death has thus taken place in the way of coma, and the case had been complicated with anasarca, and serous liquid is found accumulated in unnatural measure in the cerebral ventricles, and in the tissue of the pia mater, it seems reasonable to ascribe the coma to the presence and the pressure of that liquid. The dropsy has extended to the brain. And this view of the matter is strengthened by the connexion which may sometimes be noticed between the accession of coma and the visible increase of the dropsy in other parts of the body. My own experience accords entirely with that of Dr. Christison, as expressed in the following statement. "If the dropsical fluid be allowed greatly to accumulate, drowsiness, the first symptom of the affection of the head, very soon makes its appearance in the generality of cases, and it will speedily pass to fatal coma if not controlled, but the removal of the dropsy will usually remove the drowsiness."

To many cases, however, this explanation will not apply, there being no morbid collection of water within the skull, nor any other appreciable change there; nor, perhaps, any dropsy elsewhere. In such cases we refer the ultimate symptoms, the stupor and the death, to the poisonous influence of the urea in the unpurified blood upon the organs of animal life. Yet this explanation also has its difficulties. Urea must often circulate with the blood without affecting the brain. Dr. Christison states that he has repeatedly known the daily discharge of the solids of the urine to be reduced, for weeks together, to one-fourth of the natural amount, while, moreover, the analysis of the blood shewed that it was loaded with urea, without the appearance of any head symptom. Dr. Bright also relates a case to the same purpose. A person labouring under this disease of the kidney lived for four or five years under his occasional observation. The blood was analysed in the earlier stage, and found to contain a large quantity of urea; as much as the urine itself contained. Yet this patient had no *fits* till towards the close of his life.

I have sometimes fancied that the pale and watery condition to which the blood is at last reduced, may have something to do with the stupor and coma. I showed you, some time ago, when speaking of spurious hydro-

cephalus, that similar symptoms are apt to ensue, in conjunction with a similar defect of hematosin. It would seem that, under such circumstances, the functions of the brain are exercised irregularly, languidly, and at length not at all, in consequence of the failing supply of its appropriate stimulus through the arteries.

Another striking circumstance observable in this disease, is a readiness of various organs of the body to inflame, and particularly of the serous membranes. According to M. Solon, who has lately published a thick volume on "*Albuminurie*," this disposition has not been so manifest in France; but of its frequent appearance in this country I can add my own testimony to that of Dr. Bright, of Dr. Christison, and of Dr. Gregory. Such intercurrent acute inflammation is not an uncommon cause of the patient's death. The pleura appears to be much more often affected in this manner than either the peritoneum or the pericardium.

It follows from this tendency, that when we come to inspect the dead body, we seldom find the kidney to be the only part in which structural changes are plainly visible. Most commonly evident traces of disease are met with in various organs.

Disorder of the stomach and bowels is, certainly, a frequent companion of the renal malady: nausea, vomiting, flatulent distension, diarrhoea.

It would appear, however, that these incidental and secondary complications prevail, with irregular frequency, in different places. They are probably determined, in some measure, by local and peculiar agencies. Thus vomiting and diarrhoea have been more familiar to the Edinburgh observers than in London to Dr. Bright, or in Paris to M. Solon: while the headaches and coma, so often witnessed by the British physicians, have been comparatively uncommon in France.

Disease of the heart, if not a secondary consequence, is a very frequent accompaniment of Bright's kidney. It is probable that the cardiac disease, and the renal disease, have sometimes no connexion in respect to cause and effect, but are both results of some common cause; of habitual intemperance, for example.

I am, however, of opinion, that the renal malady has a direct tendency, by its effect upon the blood, to generate disease of the heart. It induces anæmia: and anæmia, as I showed you on a former occasion, implies debility of the muscular texture of the heart, and leads to dilatation of its cavities; and the weak muscle, becoming irritable also, grows thicker as it labours more. In fact, this is the kind of cardiac disease which, more than any other, has been found coincident with the peculiar change in the kidney.

Among 100 cases, recorded in a tabular form by Dr. Bright, there were 27 in which no affection of the heart could be detected. In 52 instances the heart presented the characters of hypertrophy, and of these no fewer than 34 were free from any trace of valvular disease. Among the 34 there were 11 cases of disease affecting the aorta: in the remaining 23 no cause for the existing hypertrophy and dilatation could be found in the heart itself, or in the great blood-vessels. The true cause may therefore be reasonably supposed to have been the renal disease, operating upon the involuntary muscle through the quality of the blood.

Whether the renal disease be ever produced by the cardiac, is more questionable. In the acute renal affection, when it proves early fatal, the kidney is always found to be gorged with blood. And the customary intermixture of blood with the urine warrants the belief that the same condition was present in patients who have recovered. From this state of engorgement springs, apparently, the subsequent series of changes. It is therefore a plausible conjecture that whatever tends to produce congestion of the kidney, tends, also, to aggravate, and may even cause, the peculiar changes in question. I need not now tell you that disease of the heart does frequently occasion congestion of the venous system, and gorge the viscera with blood. Under this influence the liver often *enlarges*. On the other hand, disease of the heart, even such as gives rise to venous congestion and to dropsy, often lasts long, and proves ultimately fatal, without the occurrence of albuminous urine, and without any appreciable change of structure in the kidney.

Pain or tenderness of the loins is sometimes, and sometimes only, an accompaniment of the renal disease. This symptom is more often present in the early than in the later stages of the malady. It occurred in one-third of twenty-eight cases narrated by M. Solon. Dr. Gregory noticed it in the half of his patients.

The *causes* of the disease of which I have been endeavouring to sketch the outline, are often obscure. Its more obvious symptoms, in the chronic form of the malady, have been observed, in very many instances, to begin soon after the exposure of the body to wet and cold under unfavourable circumstances. But it is by no means certain—indeed the probabilities preponderate on the other side—that, in these instances, the renal disorder had not previously existed in a latent state.

It is certain, however, that the acute kidney affection, which may be considered identical with febrile dropsy, does often arise under similar circumstances of exposure, and is attended with a marked disturbance of the

functions of the kidneys. And Bright's disease, in its chronic form, has been noticed as occurring in persons who had previously suffered, and had apparently recovered from, an attack of febrile dropsy. Are we not warranted in believing that the recovery was *imperfect* in such cases? that the kidney had sustained irretrievable injury? and that the disease, although from the treatment employed, or by lapse of time, it had become tranquil or latent, was ready again to give indications of its existence upon any repetition of its exciting cause?

Again, it is matter of common observation that intemperate habits have often preceded the development of this disease. Yet we may conclude that intemperance in drinking is rather a predisposing than an essential cause, from the fact that the malady is not unknown among children, and other persons whose manner of life has been strictly sober. I had lately an example of this in a young girl, fifteen years old, who had never menstruated. And this leads me to remark that the renal disorder has been known, in many instances, to follow a sudden check or suppression of the catamenia. It has sometimes seemed to owe its origin to blows received upon the loins.

The complaint happens at all ages: less often, however, in extreme youth than afterwards. Sabbatier records that he saw, while in the service of M. Bandelocque, a young infant affected with anasarca and albuminous urine. The first case described by M. Solon is that of an infant, seventeen months old, in whom similar symptoms appeared shortly after exposure to cold and wet. In 1838 a boy between five and six years old, anasarcaous, and passing bloody and albuminous urine, was in the Middlesex Hospital, under the charge of my colleague Dr. Wilson. M. Constant, in the *Gazette Médicale* for 1835, cites the case of a child of five years of age; and M. Rayer gives two plates, representing the kidneys of two children, the one five and the other six years old, who both died of dropsy with albuminous urine, the sequel of scarlet fever. In each of these the changes described by Dr. Bright were well marked, and the bulk of the kidney was considerably increased.

The malady is, however, much more common in adults: not, in all probability, because the kidney is more readily susceptible of it at one period of life than another, but because, as life advances, the circumstances which tend to produce or to foster it become of more frequent operation; intemperance, exposure to great vicissitudes of temperature, and (perhaps) disease of the heart.

It occurs, I presume for the same reasons, oftener in men than in women.

Dr. Christison suspects that Bright's kidney happens chiefly in persons of scrofulous

habit; and he found it, in several instances, coincident with phthisis pulmonalis. My own experience would not have led me to that opinion. I partake in M. Solon's doubts, whether the co-existence of pulmonary consumption and of this renal malady is more than casual. Dr. Bright tells us that "the instances in which phthisis, or any form of scrofulous or tubercular disease, has been connected with the renal affection, have been decidedly rare."

What, after all, is the true character and essence of the organic metamorphosis which constitutes this formidable disorder, Bright's kidney? All that has been ascertained of its early stages, of its course, and of its causes, furnishes to my mind a strong presumption that the structural change, in all its varieties of aspect, may be ultimately traceable to an undue accumulation and stagnation of blood in the blood-vessels of the kidney. Those curious arterial bunches, the Malpighian bodies, appear to be especially overfilled and obstructed. Rayer calls the complaint *albuminous nephritis*; and perhaps the congestion (which unquestionably is present in what I consider the acute form of the malady) may sometimes pass into chronic inflammation. We do not, however, find that it ever terminates in suppuration: yet suppuration is no uncommon event of true inflammation of that part, excited by violent injuries, or by the lodgment of calculi within it. It seems to me more probable that the mischief done to the kidney is owing to extreme congestion, and its usual consequences—the oozing forth of the blood in substance, or of some of its constituents, into the interstitial textures, as well as into the excretory tubes of the kidney. The appearance of these ingredients of the blood, and even sometimes of blood itself in the urine; the increased size of the gland in the earlier stages; the various shades of colour which its surface and parts of its interior present, as the colouring matters of the effused fluids are more or less absorbed; the impermeability of those altered parts by artificial injections; the ultimate shrinking and hardness of the organ as the disorder becomes chronic, and absorption proceeds; these are all consistent with this theory. It is plain that the morbid conditions of the urine depend, in part at least, upon a mechanical transudation of certain portions of the blood, which pass through the kidney unchanged, as through an inert filter. Mixed with the urine we find serum; its albumen, and its salts, which diminish the acidity of the mixture, or even render it neutral; and in many cases we find more or less of the colouring matter also of the blood. Those portions of the extravasated fluid which have no outlet of escape, solidify, and thus obliterate the natural texture of the part they

have invaded. The obstruction of the emergent veins of the kidney by firm clots of blood is in harmony with the same supposition.

When the kidney is thus spoiled, its natural function is imperfectly or but partially performed. The change which it should effect upon the blood, by purifying it from urea, fails to be accomplished. The albuminous impregnation, and the other altered qualities of the urine when voided, may be explained either by supposing that the secreting power of the whole gland is interfered with, but not absolutely suspended; so that the urine is incompletely elaborated: or, by supposing that portions of the gland are spoiled, and portions remain sound and effective; that true urine is formed by the healthier portions, and mixes with the constituents of the blood which pass, as such, through the diseased portions. The latter of these hypotheses is most in accordance with the fact that, in the advanced stage of the disorder (when we may conceive the spoiled parts to have become mere solid unchanging masses) the albumen is apt to disappear from the urine: and also with the fact, that complete recovery does, sometimes, appear to take place; in which cases we may imagine that, although a small portion of the substance of the gland has undergone irremediable change, enough of it remains healthy to serve the wants and purposes of the economy.

I have yet something to say respecting the *dropsy*, which is so common an accompaniment of these renal changes; but I must defer it till to-morrow.

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### ON THE HYDROPATHIC TREATMENT OF FEVERS.

By R. H. ALLNATT, M.D., A.M., F.S.A.  
(For the Medical Gazette.)

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THERE are some disorders to which the application of cold water, as a remedial agent, appears so unequivocally indicated, as to render it a matter of surprise that, after having been suggested, and its claims rendered apparent, it should ever have fallen even into partial disuse. The enthusiastic genius of Priessnitz may have impelled him and his votaries into some extravagancies beyond the bounds of legitimacy and prudence; but after the system shall have been divested of the marvellous, and rendered amenable to unbiassed investigation, the result will

furnish, I think, to the practitioner, many rational, valuable, and available resources.

The practice of applying cold water in the treatment of fever was not unknown to the ancient physicians; but although so obviously indicated, and its efficacy so strongly urged by the late Dr. Wright, of Jamaica, and Dr. Currie, of Liverpool, in the hot stages, it has never become general. In the London Medical Journal for 1786, several cases are detailed, from the pen of Dr. Wright, of the successful treatment of fever by cold ablution. He succeeded in arresting the progress of the disease in his own person, after twice applying the remedy, and from personal experience of its immediate effect, he employed it successfully in other cases. Dr. Currie subsequently extended the principle, and regulated the practice from accurate observation of its salutary action.

It is unnecessary perhaps to enter here into the etiology of fever, or the effects which follow the introduction of morbid poisons into the system. Those effects are apparent, but the exciting cause is still involved in obscurity. It will suffice for our present object to state, that when the skin grows preternaturally hot, the time for cold ablution has arrived.

A young woman came lately under my care labouring under typhoid fever, consequent upon synochus of long duration. She had been the tampered charge of a renowned Homeopath, and had been drugged by decillionths into the jaws of the grave. I found the skin steadily hot, without perspiring; aphthæ had formed about the tongue and lips, and there was transient delirium at night. After attending to the state of the bowels, I ordered cold applications to the heated surface, and with immediate benefit; the delirium ceased, she regained her mental tranquillity, and awoke refreshed after each successive application.

I am aware it is the practice of some physicians to do little else in cases of fever than foment the surface, and exhibit ice internally. An intelligent practitioner, Dr. Gully, who has lately published a work on "The Simple Treatment of Disease," has followed this practice for years, and, he tells me, with great success. If there be visceral disease, this method, in combination



with local bleeding, recommends itself by its simplicity, and the evidence we obtain of its efficiency. If, however, no lesion exist of an internal organ, hot topical applications are not indicated.

It is not requisite, in this country at least, that the sufferer should be half drowned, by having, as have been recommended, buckets of cold water dashed over his body. An equally efficacious, and certainly a less objectionable mode of procedure, is to take the patient from the bed, lay him on the floor (or in a bath, if there be one convenient), and affuse the body with a gentle shower from the nose of a common waterpot. The effect is to reduce the morbid heat, lower the pulse, induce perspiration and sleep, and augment the stagnant secretions; and, in nine cases out of ten, no ill effects will follow, if the operation be performed with due consideration.

The following rules, recommended by Dr. Currie, appear to embrace all the precautions requisite to be observed:—

1. The remedy should not be used when there is any considerable sense of chilliness, although the thermometer indicate a morbid degree of heat. If the affusion be employed during the cold stage of fever, the respiration is nearly suspended, the pulse becomes feeble and fluttering, and of incalculable frequency, the surface and extremities are doubly cold and shrivelled, and the patient seems to struggle with the pangs of instant death. Under such circumstances the affusion of a "*few buckets*" of cold water would extinguish life!

2. Cold affusion ought never to be employed when the heat, measured by the thermometer, is less than, or equal to, the natural heat, notwithstanding the patient feel no sense of chilliness. This is sometimes the case towards the last stages of fever, when the powers of life are weak.

3. It is also necessary to abstain from the use of this remedy when the body is under profuse sensible perspiration; and this caution is more important in proportion to the continuance of this perspiration. In the commencement of sweating, especially if it has been brought on by active exercise, the affusion of cold water on the naked body, or even the immersion in a cold bath, may be hazarded with little risk;

but after the sweating has continued for some time, and flowed freely, especially if the body has remained at rest, affusion or immersion is attended with danger. Sweating is a cooling process in itself; but in bed it is often prolonged by artificial means, and the body prevented from cooling to its natural degree of heat. In this situation, Dr. Currie states that the heat sinks rapidly on the exposure of the body to the air, and that the application of cold water, either by affusion or immersion, is accompanied by a loss of heat, and a deficiency of reaction, altogether incompatible with safety\*.

According to the same author, if affusion be employed on the first or second day, with the precautions recommended, the progress of the fever is often checked; but it is seldom successful when applied so late as the third or fourth day; though when administered on the eighth or tenth, or even later, it moderates the symptoms and shortens the duration of the fever.

Dr. Tweedie states, "the advantages of the cold affusion, in the acute or inflammatory forms of fever, have been acknowledged by almost every writer or practitioner who has adopted the practice. My own experience of it certainly accords with that of others, as to its efficiency in reducing the febrile heat and moderating the symptoms†."

In the early and acute stages of the genuine exanthemata, cold affusion has been resorted to with success. The testimony of Dr. Bateman as to its utility in scarlatina, especially that of the anginose form, is as follows:—"We are possessed," he says, "of no physical agent, as far as my experience has taught me, (not excepting even the use of blood-letting in acute inflammation) by which the functions of the animal economy are controlled with so much certainty, safety, and promptitude, as by the application of cold water to the skin under the augmented heat of scarlatina and some other fevers. This expedient combines in itself all the medicinal properties which are indicated in this state of disease, and which we should, *a priori*, scarcely expect it to possess; for it is not only the most effectual febrifuge (the *febrifugum*

\* Currie's Medical Reports.

† Cyclopædia of Practical Medicine.



*magnum*, as a reverend author long ago called it,) but is, in fact, the only sudorific and anodyne which will not disappoint the expectation of the practitioner. I have had the satisfaction, in numerous instances, of witnessing the immediate improvement of the symptoms, and the rapid change in the countenance of the patient, produced by washing the skin. Invariably in the course of a few minutes the pulse has been diminished in frequency, the thirst has abated, the tongue become moist, a general free perspiration has broken forth, the skin has become soft and cool, and the eyes have brightened; and these indications of relief have been speedily followed by a calm and refreshing sleep. In all these respects the condition of the patient presented a complete contrast to that which preceded the cold ablution, and his languor was exchanged for a considerable share of vigour. The morbid heat, it is true, when thus removed, is liable to return, and with it the distressing symptoms; but a repetition of the remedy is followed by the same beneficial effects as at first\*."

In measles, also, the application of cold water has been adopted with success in the early stages. Kæmpfer assures us that, at Java, the children die of the measles if they are not washed with cold water. Guersent says, he would not hesitate to apply the remedy where there was pure debility, free from disease of the chest.

In the ardent stages of the eruptive fever of variola, cold affusion has been attended with beneficial results.

Dr. Currie was of opinion that salt water may be applied with more advantage than simple water, and persisted in for a longer period with less hazard to the patient. There can be no objection to the addition of salt, as it may, by its gently stimulating action upon the skin, more speedily promote perspiration. The abstraction of morbid heat, however, is the main object of the practitioner, which induces a powerful and salutary reaction.

In the category of diseases treated by cold water, those, I trust, which I have briefly noticed will hereafter assume a conspicuous position. It is, I know, the mere revival of an old, and, I am sorry to add, well nigh obsolete,

practice; but I am assured that none could well be so safely consigned to the tender mercies of the Hydropath as many of the exanthemata and febres.

The practitioner should never be deterred, by the mere repugnance of his patient, from employing so efficient and powerful a remedy, in every case in which it is clearly indicated. The *debacle* of the bucket system might indeed overwhelm the ardent and morbid imagination with an idea of its terrific grandeur; but the immediate relief obtained by the sufferer after a judicious application of a moderate supply of the "invigorating fluid," will speedily transform him into a suppliant proselyte.

4, Parliament Street, Whitehall,  
June 11th, 1842.

## OBSERVATIONS

ON THE

## STATISTICS OF PHTHISIS,

AND ON THE INFLUENCE OF CLIMATE AND  
OCCUPATION ON THE PRODUCTION AND  
DEVELOPMENT OF THAT DISEASE.\*

"Il faut se rappeler incessamment qu'on ne devine pas la vérité, qu'on la trouve; que la nature est un problème dont on ne peut avoir la solution qu'au moyen d'un nombre suffisant de faits exacts."—LOUIS, *Recherche des faits généraux*.

[Continued from p. 296.]

EGYPT is singular for the exemption from phthisis enjoyed by its inhabitants. The salubrious character of its climate has been for ages recognized; and we are informed by Pliny that, even in his time, so much below the average mortality from consumption in other countries was the mortality in Egypt, and so beneficial to the consumptive was a residence there supposed to be, that persons suffering under pulmonary diseases were sent for the recovery of their health from Italy to Egypt.

Nor, indeed, does the climate of Egypt appear to have materially altered in respect to its salubrity since the commencement of the christian era; in our own time its reputation stands high for the freedom of its inhabitants from the ravages of phthisis. Savary† remarks, "quant à la phthisie et aux fluxions de poitrine, qui dans les contrées froides enlèvent tant de personnes

\* Practical Synopsis of Cutaneous Diseases.

\* Communicated by the author.

† Lettres sur l'Egypte, tom. iii. p. 8.

à la fleur de leur âge, elles sont inconnues sous cet heureux climat. Jamais on n'y éprouve de douleurs de poitrine." Dr. Madden\* gives a similar account, mentioning, in particular, that in the course of his medical tour he met with but one case of consumption in Upper Egypt.

The climate of Egypt is certainly not variable, and the range of the thermometer is less than in this country: according to Lane†, the general height of the thermometer in the depth of winter, in Lower Egypt, in the afternoon, and in the shade, is from 50° to 60°; in the hottest season, from 90° to 100°; and about ten degrees higher in the southern parts of Upper Egypt.

The usually high temperature of the climate, the highest temperature registered by Rüppell‡, at Cairo, in March 1831, being 19.29 Reaumur, and the slight variations to which it is subject§, may well account, on Young's hypothesis, for the low mortality from phthisis happening in Egypt. In accordance with the views which I have stated in a previous number, I do not attribute the rarity of phthisis in that country to such a cause: the remarkable and extreme dryness|| of the air of Egypt, which has been long observed, and to which we are indebted for the almost perfect preservation of many of the wonders of ancient art still existing in that country, is sufficient, on the theory which I have proposed, and intend in the present and succeeding numbers to support, to explain the singular exemption from phthisis enjoyed by the inhabitants of that country.

The remark of Dr. Madden, which has been quoted above, relates to Upper Egypt alone; there is no doubt, however, that, compared with the frequency of its occurrence in European countries, consumption is extremely rare in every part of Egypt; but from Madden's observation it may be presumed that the

natives of Upper Egypt are more particularly exempt from phthisis. Now it may be remarked that the climate of the southern parts of Egypt\* is far drier than that of Lower Egypt, including under the latter term the whole delta of the Nile, and the country from Musr to the Mediterranean; and Clot Bey† has likewise observed that tubercles in the lungs, which are very rare in every part of Egypt, are scarcely ever observed, except amongst the negroes, natives of Sennaar, who from the burning and arid sands of Nubia are brought to the comparatively humid climate of Lower Egypt.

In this case, then, the rule of Young holds good; but we shall see in the sequel that it is far from obtaining generally, and in many cases the mortality from phthisis in climates where the temperature is uniformly high, is far greater than that in other countries, where the most violent variations of temperature are experienced. Thus, in some of the West India Islands, where the annual range of the thermometer does not, I believe, exceed 15°, or about one-third the extent to which the temperature varies in Egypt, phthisis is fearfully prevalent.

The examples which I shall now adduce are sufficient, I think, to show the truth of the proposition stated above (p. 296), that the prevalence of phthisis in any particular country is not increased by the variability of temperature to which that country may be subject.

Australia, from the frequent variations of temperature experienced in that country, and which not only occur with great rapidity and frequency, but are remarkable likewise for the great extent to which the mercury rises or falls, is a country in many respects well fitted to test the correctness of the theory long held, and even now supported by the greater number of medical authorities, that variability of temperature is one of the principal circumstances which induce phthisis. The fluctuations in the height of the thermometer are far greater and more common in Australia, than the variations of

\* Travels in Egypt, &c. by R. Madden, vol. ii. p. 20.

† Modern Egyptians, vol. i. p. 3.

‡ Reise in Abyssinien, 2er Band, s. 434.

§ There are some exceptions to this: thus in a paper by W. Black, R.N. on the climate of the Mediterranean (Edin. Phil. Journal, 1838), we find it stated that "a change of wind at Alexandria, from N.E. to S.W. by S., produced an increase of the temperature from 56 degrees to 76, being 20 degrees in one day."

|| Coutelle has given (Description de l'Egypte, xix. 451) a series of observations made with the hygrometer in Egypt; but as the description of the instrument employed is not stated, they are hardly worth extracting.

\* In the southern part of the valley of the Nile rain is very rare. "Throughout Nubia," says Burckhardt, "rain never falls in the valley, some light showers excepted."—Burckhardt's Nubia, p. 10.

† Andral, Cours de Pathologie, tom. 1, p. 450. Paris, 1836.

the thermometer in Europe: Lang records a descent of twenty-five degrees in twenty minutes, which occurred at Paramatta, at six o'clock in the evening, and in summer (in February 1835), and I believe such a phenomenon is far from being very rare: thus, Cunningham states\* that he has seen the thermometer in the shade rise instantly from 80° to 110°.

Yet, notwithstanding these violent and continual changes of temperature, the climate is far from being unhealthy, and consumption is generally believed to be extremely rare. Lang, whose account, in the absence of any authentic numerical statements, is the best on which to rely, does not, however, assert that the colonists enjoy that almost entire exemption from phthisis which has been sometimes stated to exist, but still he affirms that phthisis is an unusual disease in that country. "Cases of consumption," he says, "have occasionally occurred and terminated fatally among the native youth of the colony, but they are by no means frequent; and Europeans who have brought the genuine phthisis pumonalis along with them to the country, sink at last under the fatal influence of its deadly virus, although, humanly speaking, they may be said to add three or four years to their lives by going to New South Wales†." That there is a considerable freedom from phthisis, and considering the habits of a large proportion of the population, a somewhat remarkable exemption from that disease, is, I think, sufficiently evident from the above quoted remark of Lang; and the variability of the climate precludes the idea that the low rate of mortality can be owing to the uniform temperature enjoyed by the colonists.

But, variable in temperature as the climate of Australia is, it is also extremely dry, although the quantity of rain which falls annually in New South Wales is not less than the annual fall in some parts of Great Britain: thus, the quantity of rain which fell at the observatory at Paramatta from May 1822 to April 1823 was rather under thirty inches, but of this quantity none

is recorded to have fallen in the months of May, June, July, and August. I have no means of ascertaining the usual hygrometric state of the atmosphere, or even the number of days in the year on which rain usually falls in New South Wales; but the dryness of the climate is well known, and sufficient, on the theory proposed in the present series of papers, to account for the low rate of mortality from phthisis in the great Southern Continent.

Of course, the only means of knowing, with any approach to accuracy, the actual degree of humidity of any climate, is by the indication of some sort or other of hygrometer, or still better and more exactly, by the ascertainment of the dew-point. The quantity of rain which falls at any place in the course of a year, and which is, unfortunately, in many cases, the only information we can obtain, is but an indifferent measure of the dryness of a climate; much of the dryness of any climate depending on its geographical situation, the nature of the soil, the geological features and character of the country, and especially the position of the water-shed.

In general, however, as a measure of the humidity of any climate, I certainly prefer the number of days in the year on which rain falls, to the number of inches of rain observed in the same time.

I shall again illustrate the proposition stated above by giving an account of the climate of the Cape of Good Hope, and an abstract of the mortality in that colony. The Cape is another country, in addition to Australia, where, though the climate is subject to very considerable and rapid variations of temperature, the general mortality, as also the mortality from phthisis, is not only much below that in most other climates, but is also inferior to the mortality happening among the troops in England.

The colony may be, and is officially, divided into two districts—the Cape, and the Eastern Frontier District. This distinction has been made rather fortunately for the purposes we have in view, as the two districts appear to differ considerably from each other in climate; and the reports exhibit also a considerable difference in the mortality of the troops, both native and British, in the two districts. At Cape Town,

\* Letters from New South Wales, by P. Cunningham, vol. ii. p. 186.

† Historical and Statistical Account of New South Wales, by J. D. Lang, vol. ii. p. 159.

(lat.  $34^{\circ} 22'$  long.  $18^{\circ} 24'$  E.) according to Tulloch\*, the average of a series of observations continued for seven years (1827-33) gave  $86^{\circ}$  Fahr. as the maximum in the hottest month, January; while the minimum, which occurred in July and August, was no lower than  $56^{\circ}$ . The real temperature to which the human body is exposed is, however, both far higher and lower than these observations indicate: unsheltered, the thermometer rises not unfrequently as high as  $110^{\circ}$ ; and in an experiment mentioned by Tulloch, a thermometer, which, a little after midday, stood at  $86^{\circ}$  in the shade, rose to  $136^{\circ}$  on being hung against a wall exposed to the sun and breeze. Sir John Herschel, in an interesting letter† on the Meteorology of the Cape, states that he had never seen the thermometer (in the shade) lower than  $31^{\circ}$ , or higher than  $101^{\circ}$  Fahr. He further remarks, that the climate of the Cape offers very sudden and very considerable variations of temperature. Snow, he says, never falls on the plains. Hail, as also hoar frost, is rare. Ice is sometimes formed on pieces of water sheltered from the wind; but this happens but seldom, and only on calm and clear nights.

Let us now endeavour to form some idea of the usual hygrometrical condition of the atmosphere at the Cape. Tulloch does not appear to consider the climate as remarkable for dryness, and mentions that "the want of rain and moisture, which renders the greater part of the interior a barren desert, is but little experienced in the Cape District; being surrounded, on three sides, by a boundless expanse of ocean, and embosomed in mountains whose summits attract and condense the vapours, it enjoys a greater share of moisture than is usual in temperate climates." It would, perhaps, be difficult to conclude, from the above extract alone, whether the reporter intended to convey the idea that the quantity of vapour existing in the atmosphere, as steam (and this is the point on the importance of which I particularly insist), is greater at the Cape than in other countries whose mean temperature is lower; or simply that the country, from its geo-

graphical situation and its general features, is well irrigated and supplied with water. The quantity of rain which falls in the year at the Cape, and the number of rainy days, certainly appear to be both far from inconsiderable. Thus the average number of days in the year on which rain falls, is stated, on an average of many years, to have been 75; and the quantity measured averaged about 41 inches annually. The number of days in the year on which rain falls at the Cape appears thus to be about one-half the number of rainy days in England, the latter being, according to Kämtz\*, 152. "We have at the Cape," says Herschel†, "a wet and a dry season, the distinction between them being well marked. An immense quantity of rain always falls in the four months from June to September; and it scarcely ever rains in the month of December, January, and February. The climate of the eastern parts of the colony differs from that of the Cape itself."

I am not acquainted with any observations of the hygrometrical state of the air at the Cape. The air must, however, be frequently extremely dry. Sir J. Herschel says that, during a north or north-east wind, the thermometer, with its bulb moistened, marks generally from  $15^{\circ}$  to  $20^{\circ}$  Fahr. less than a thermometer with a dry bulb. These winds are experienced from February to August (during part of the rainy seasons), but they are unusual after the middle of July. The regular wind from the south is, Sir J. Herschel says, constantly dry, and, in general, when it does not rain at all (from December to April), or when it rains but little, the air is drying, and evaporation proceeds rapidly. "It is then," says Herschel, "that our hills and plains assume their arid aspect. All bulbous plants lose their leaves, and their destruction is inevitable. The intense glare of the sun, and a continual dry wind, destroy all vestiges of plants by actual desiccation. They shrink up in an incredible manner; and the vegetable matter contained in the soil appears as if carbonized." The dryness of the air is to be accounted for not only by the proximity of the colony to a vast

\* Report on the Mortality and Sickness of Troops at the Cape of Good Hope. 1840.

† Bibliothèque Universelle de Genève. Tom. 9. March, 1838.

\* Lehrbuch der Meteorologie, vol. i.

† Ut supra.



desert, but also by the physical features of the country. Major Tulloch in this way explains the cause of the unproductiveness of a large part of the colony. "The cause of so large a portion, amounting probably to nine-tenths of this extensive colony, being totally unproductive, and available for no useful purpose, arises, not so much from any deficiency in the soil, as from the want of water. Though unable to specify the physical causes to which this peculiarity is attributable, it may be stated that, in many of the desolate regions of the Great Karroo, three years have elapsed without a drop of rain; and even in the more favoured district of Albany and Ultenhage, the supply is extremely limited and irregular. Even when rain does fall in these districts, it seldom comes in refreshing showers, which gradually moisten and fructify the ground, but in devastating torrents, accompanied by violent storms of thunder and lightning."

"The soil being a stiff clay intermingled with sand, and hardened by exposure for many months to the sun's rays, will not readily absorb moisture; so that the rain is, on such occasions, immediately drained off to the rivers and water-courses, which, rising to an enormous height, overflow their banks and desolate the surrounding country; but in a few hours, when the torrent has swept past, their channels have been left dry and bare as before. Instances have occurred of rivers thus rising to the perpendicular height of 75 feet above the usual level."

Having now formed some notion of the nature of the climate, I will extract from Major Tulloch's report the number of phthisical deaths among the troops stationed in the Cape District. The mortality from phthisis is, as will be perceived by the inspection of the table below, extremely small; and this is certainly not owing to the high rate of mortality from other diseases. The mortality is, in every respect, very low. "Neither the variable climate of the Cape District, nor the high range of temperature during the summer, seem, by any means, prejudicial to health; for in 1833, the deaths were only 681 out of a population of 31,167, while in the United Kingdom, according to the census of 1831, the proportion was 1 in 47½. When it is taken into view, that among the former are included the

deaths of many invalids who arrive at Cape Town in the last stage of disease, there can be little doubt that, so far as regards the resident population, the climate is at least as favourable to the constitution as that of Great Britain. It may be stated as a further proof, that in the neighbouring districts of Swellendam, Stillenbosch, and Worcester, where the deaths were not so liable to be increased by the arrival of invalids, the mortality for 1833 was only 707, out of a population of 47,071, or 1 in 67, being in a lower ratio than in the healthiest countries in this kingdom." This low rate of mortality from all diseases collectively, renders still more striking the low rate of mortality from phthisis at the Cape.

In the annexed table, the second column gives the number of troops stationed at the Cape in such year; the third contains the number of white troops admitted into the hospitals, on account of all diseases of what nature soever; in the fourth is given the number of deaths in the military hospitals produced by all diseases, and in the fifth and sixth the number of admissions and deaths from phthisis.

*White troops serving in the Cape district from 1818 to 1836 inclusive.*

Year.	Strength.	Admissions.	Deaths.	Admissions Phthisis.	Deaths Phthisis.
1818	1291	892	14	6	1
1819	1206	995	13	2	3
1820	1220	1081	13	4	1
1821	1569	1169	16	4	1
1822	1385	1405	24	26	10
1823	1347	1230	17	8	4
1824	1318	1419	15	12	5
1825	1346	1829	35	9	4
1826	1327	1340	15	7	4
1827	1423	1200	19	4	1
1828	1154	1131	15	5	3
1829	1171	1166	7	4	2
1830	1174	1468	11	6	2
1831	1154	1218	15	5	3
1832	1114	1163	19	5	3
1833	1096	1157	16	8	2
1834	1085	1021	22	5	6
1835	586	331	15	0	0
1836	748	790	10	5	1
Total	22,714	22,506	311	125	56

These returns, which give 1195 as



the average strength in each year, indicate, if we assume the deaths from phthisis to be registered correctly, an annual mortality from phthisis of only 2·947 amongst the whole garrison, or an annual mortality from the same disease of 2466 per 100 of the force.

The practice of invaliding, which will subsequently be shown to diminish to a great degree the number of phthisical deaths registered at Gibraltar, does not obtain at the Cape to so great an extent as at the last mentioned station. At Gibraltar, out of the whole number invalided, 1 in each 34 was invalided on account of pulmonic diseases, while at the Cape the proportion of those invalided for pulmonic diseases is only 1 in 9 of those invalided on account of all other complaints. The number of troops invalided on account of pulmonic diseases, from 1825 to 1836 inclusive, was 41; no returns are given for the years previous to 1825: if we suppose that all these cases were cases of real tubercular phthisis, which is far from probable, and we add them to the number of deaths from phthisis registered in the colony, the mortality from phthisis will amount to only 426 per 100 of the average force annually. This is a considerably lower rate of mortality than that in most other colonies from the same disease. The number of white troops in the Cape district, attacked annually by disease of the lungs, 98; phthisis, 6·58.

The deaths from diseases of the lungs generally, were 3·9.

The peculiarities which we have noticed in the climate of the Cape district are still more remarkable in that of the Eastern frontier. The temperature is much higher, and more variable in the eastern part of the colony, than near Cape Town, while the air is generally much drier and the climate still more healthy, than that of the Cape district. At Graham's Town, which is situated about 1000 feet above the level of the sea, the difference between the wet and dry seasons is, according to Sir J. Herschel, much less evident than in the Cape district. In the Eastern frontier district dew is very rare; rain only falls in any quantity in the months of November, December, and January, and so limited is the supply of water, that this necessary of life is in some places very difficult to be procured in sufficient quantities for the troops.

The climate\* in different parts of the frontier varies materially; about Graham's town, and near the sea-coast, the winter nights are sharp and clear, accompanied by slight frosts; while the summer heat, though sometimes intense, is generally tempered by a cooling breeze. At some of the posts, however, which do not possess this advantage, and where the wind is heated by the arid and sandy surface of the interior, the temperature during summer is excessive. On the Keiskamma and Great Fish Rivers, for instance, the thermometer about noon has been frequently known to range for several weeks from 105° to 110° in the shade, and from 135° degrees to 140° in the sun; and even during several months it has seldom been under 95° degrees at that hour. Not only is the climate much hotter than that of the Cape district, but, as remarked above it, is also subject to very sudden and considerable transitions of temperature. In summer the thermometer will occasionally range from 64° to 110°; and in winter from 75° to 32° in the course of a few hours.

Yet, notwithstanding the high temperature of this part of the colony, and the rapid variations of temperature to which it is subject, it is probable that there is no part of the globe more healthy, or in which the rate of mortality is lower than in this; in 1833 the deaths being only 1 in 91. Pneumonia and consumption are still less common than at Cape Town, and the freedom of the troops from all diseases of the lungs will be seen by comparing the numbers representing the mortality in the Eastern frontier district, with those given above for the Cape district.

*Diseases of the lungs.*

	Annual admissions per 1000.	Deaths per 1000.
Eastern frontier	82	2·4
Cape district ...	98	3·9

The following table gives the total number of deaths amongst the troops stationed on the Eastern frontier, as also the number of phthisical cases admitted into the military hospitals, and the number of deaths from phthisis from 1822 to 1834 inclusive.

\* Tulloch: Report, &c. 1840.

Year.	Strength.	Admissions from all Diseases.	Deaths from all Diseases.	Admissions for Phthisis.	Deaths from Phthisis.
1822	627	348	7	1	0
1823	600	418	5	2	0
1824	470	293	4	1	0
1825	350	302	4	1	0
1826	385	309	4	1	1
1827	370	344	1	3	0
1828	357	464	6	2	0
1829	588	621	6	2	1
1830	577	639	7	1	1
1831	597	572	8	2	1
1832	561	524	4	2	1
1833	563	464	7	3	3
1834	585	422	2	1	0
Total.	6630	5730	65	22	8

The deaths from phthisis in this part of the colony amount to only .615 for the whole garrison annually, or .1206 per 100 of the mean force. Neither is the immunity from phthisis at this station confined to the British troops: the native troops enjoying a degree of exemption from this disease almost equal to the preceding. The following table gives the mortality amongst the Hottentot troops, and also the admissions of native troops in the hospitals. The returns for the years 1822 and 1823 are omitted, they being defective, and confined to the corps stationed at Graham's Town.

Year.	Strength.	Admissions all Diseases.	Admissions Phthisis.	Deaths.	Deaths Phthisis.
1824	394	460	0	1	0
1825	452	422	1	11	1
1826	471	495	3	6	1
1827	472	357	2	6	2
1828	267	131	1	2	1
1829	233	179	0	2	0
1830	247	168	3	3	2
1831	263	203	0	2	1
1832	268	147	0	2	0
1833	247	172	2	2	0
1834	220	129	0	1	0
Total	3534	2863	12	38	8

The mortality amongst the native troops is thus remarkably low, the annual mortality from phthisis being

.727 amongst the whole garrison, which, the strength being 321, gives an annual rate of mortality from phthisis of .2265 per 100. This is rather higher than the mortality amongst the British troops from the same disease, the mean mortality from phthisis amongst the European troops in the whole colony being only 1.828 per 1000. This may probably be accounted for by the invaliding of the white troops, which does not take place amongst the Hottentots, and partly by the severer service the latter have to perform, and their physical constitution; to the latter of which considerations Major Tulloch appears to attribute some importance.

[To be continued.]

ON GRANULAR DISEASE OF THE KIDNEY.

By REGINALD BURRIDGE, M.D.  
Physician to the Taunton and Somerset Hospital, &c.  
(For the London Medical Gazette.)

THE pathological condition of the kidneys, which favours the escape of albumen, and leads to granular disorganization of their structure, is still, it seems, a matter of inquiry. It has been long pointed out, particularly by Dr. Elliotson and the late Dr. Darwall, that albuminuria, the presence of albumen in the urine from disturbed function, results from a congestion of the renal capillaries, and is supposed to be proportioned to the extent of it. Almost every writer upon the subject, from Dr. Bright in 1827, to Mr. Robinson in 1842, leans to the conclusion that an actual process of slow inflammation lays the foundation for the future structural lesion. Mr. Robinson, indeed, contends for a genuine and marked nephritis; and that the morbid appearances result from the intensity and duration of a chronic inflammation: whilst Sir B. Brodie distinctly asserts that the same state which leads to the secretion of albumen may lead to the secretion of pus also, which is uniformly diffused through the urine. Some years ago, I maintained, before the medical faculty of the University of Edinburgh, the congestive origin of this disease, and the nonentity, or, at most, the casual occurrence, of inflammation in organs about to be so affected; and I

see no reasons which induce me to change the conclusions which I had then formed. The white, opaque, interstitial deposit, which invades the cortical or secreting part of the kidney, occludes the tubular or uriniferous structure, and finally the infundibula and pelvis, is not altogether a perversion of nutrition, for it encroaches but very slowly on the healthy structure, which yields to it as to scirrhus.

In the small towns of an agricultural district, where drunkenness is not the prevalent local vice, the disease in question is rather rare. I have met with seven cases only in the last six years: whilst in the Royal Infirmary of Edinburgh alone, eighty cases occurred during the two years that the late Dr. James Gregory was occupied with the study of this disease. And Dr. Bright, as the result of his experience in the London hospitals, refers dropsy to the state of the kidney in the proportion of five cases to one. The blanched and leuco-phlegmatic aspect of the victims to this disease, a consideration of the causes which are set down as influencing its origin, together with a glance at its concomitants, particularly the most frequent one—dropsy—will point to one common secondary cause—a protracted disturbance in the vicarious action of the kidney: indeed, it was the expressed opinion of Dr. Bateman that dropsy might be produced by an immoderate proportion of serous or watery fluids in the blood-vessels, more especially when conjoined with other causes known to be conducive to the disease; and the experiments of Dr. Hales establish the truth of this fact as fully as those of Lower evince the effect of venous obstruction. Again, a vast majority of these cases are furnished from the ranks of the intemperate—persons addicted to the free use of ardent spirits—to which, it may be added, that temperate persons so affected, have been observed to be of a weak strumous habit; a remark of Dr. Gregory's founded on extensive observation, which he justly considered of much importance: further, it was long since shown by Andral, that the facility with which these local hyperemias are produced is not always in a direct ratio to the plethoric state of the subject.

The researches of Dr. Abercrombie

and Dr. Alison have sufficiently proved that in persons of irregular, dissipated habits, and broken constitution, when the blood is unusually serous, and its motion languid, there is a marked tendency to minute albuminary deposits, taking more or less of the tubercular form: and this is much promoted by unusual congestion of blood affecting any organ. This, I think, furnishes us with a clue to the nature of the disease, and indicates how the abuse of ardent spirits, among other sources, may be both a predisposing and an exciting cause.

I have often been struck by the close resemblance which certain of these kidneys seem to bear, in their intermediate or transition state, to the appearance of the gin liver, or nutmeg liver of some authors; an aspect which Mr. Kiernan has proved to arise from mere congestion of blood, and which Mr. Robinson, a recent experimentalist, produced in the kidney by tying the renal vein. But this hyperemia does not constitute inflammatory action, being merely *one* of its elements; and this, notwithstanding the ideas of Broussais and Lombard, is by no means a necessary precursor of organic changes. For although Dr. Alison has proved that repeated inflammation, or even continued irritation of an organ, may induce a deposition of tuberculoid matter there, yet as that matter can be detected in the blood, and be eliminated by a healthy secreting surface, as was ably shown by Dr. Carswell, we are forced to conclude with Dr. Billing that these diseases have nothing to do with common inflammation as a cause, but do themselves produce it only when the effused matter comes to act as a foreign body from its bulk or other circumstance. Neither do we mean to deny that inflammation may incidentally occur simultaneously with the effusion.

The absence of albumen from the urine cannot be admitted as a sound test of the absence of congestion, and the stationary condition of structural lesion. In two persons who were under my care, the albumen disappeared some weeks before death, but the local symptoms of a renal affection were aggravated, and the incidental affection suddenly became intractable and fatal. Here the kidneys were swollen, dark, and turgid, with the granular nutmeggy appearance already mentioned. In

several other cases where the albumen disappeared for a longer period before death, the local symptoms ceased not, and the patients sunk under one or more of the very unmanageable complications. Here the kidneys looked scabrous and tubercular, and cut with the resistance of scirrhus—a more advanced stage of disorganization. In all these cases the urine was decidedly low in point of density, while it was almost uniformly below the natural standard in point of quantity.

In this congested state of the kidneys, when there is not a manifest failure of the vital powers, a small bleeding will take off the injecting force of the heart, and restore the balance in power between the heart and capillaries; whilst Dover's powder and the vapour bath will suffice to restore their natural action. Mercury too, so universally condemned, I have here found serviceable. Dr. Wells was the first to remark that it produced albumen in the urine. Before the nature of this disease was known, Dr. Blackall pointed out that where the urine was coagulable, and digitalis agreed, both calomel and squill were injurious: he gives it as a positive cause for anasarca, and considers its exhibition equivocal and hazardous, in which opinion Dr. Darwall coincides. The most successful of Dr. Bright's cases were those in which he rigidly abstained from the use of mercury: it was administered in eleven of Dr. Gregory's cases, and violent salivation occurred in six of them. Nevertheless, where the patient is not of an enervated and exhausted frame, nor the structural changes far advanced, we may derive benefit from it. The difficulty sometimes met with in establishing diuresis has led to the employment of different diuretics; but the organs, robbed of their nervous energy, are partially incapacitated for the secretion of urine; and not only does the serum of the blood escape with destructive debility to the constitution, but the congestion is augmented, and they are urged to hæmaturia. Reason and experience, however, sanction the employment of digitalis in some of these cases, although it seems to me that, in most instances, it is the removal of the dropsical effusion, and the temporary relief of the system generally which it effects, rather than any beneficial change in the tendency to structural disease. For

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June 17, 1842.

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## MEDICAL GAZETTE.

Friday, June 24, 1842.

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CICERO.

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### THE DIVISION OF MEDICAL LABOUR.

IN the pages of the GAZETTE have lately appeared, as most of our readers are aware, several letters referring to the division of medical labour, from the pen of Dr. Hull, containing much sterling sense, and representing forcibly the conflicting objects and passions which induce the self-complacent philosophers of these days to raise a clamour against it. In fact, the main fault in these letters, if fault there be in "being bold in time," is, that they are too true; that they manifest too plainly the feelings which actuate the agitators, and, as a necessary consequence,

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bring down upon their author the cavilings and reproaches of the many persons whose object it is to keep candid statements in the background, well knowing them to be the strongest enemies to their own self-interested schemes.

Dr. Hull comes forward the defender of the present mode of dividing medical practice between the physician, the surgeon, and the general practitioner. In successive letters he has considered the position of each with regard to the public and to each other; and has demonstrated the advantage of the system, and the benefit which one party may afford to, and derive from, the other, with pithy but forcible argument, which the ridicule of adversaries cannot affect. The justice of his remarks all must feel, though many may be unwilling to admit it.

It might have been imagined that the existing divisions of the profession, founded, as they undoubtedly are, on general utility, would, in their essential and obvious advantages, have been sufficiently secure against the shafts which dissatisfied persons aim at them. They are no new or speculative contrivances, but they have arisen in the progress of time, as affording the best means by which the public could be duly attended, the emolument to the practitioner secured, and the science of medicine forwarded. One would have thought, that a system so evidently beneficial would scarcely have been assailed by any one, much less that it would be endangered by those who reap the good fruits of it. But, unfortunately, the cry of reform is a very powerful one; it has something magical in it which entangles men, and often carries them away with it, in spite of their better reason. The desire of change is so strong, that many run after it at all hazards. And as nothing *mundane* is or can be perfect,

it is impossible that any system of laws should meet all contingencies; there must be always room for complaint, and men are too apt to see only the dark side of the picture, forgetting the advantages they experience in the consideration of the ills they suffer. In taking a review of the medical code, they regard it only in connection with the latter: they trace all their grievances to it, while they attribute their comforts to some other cause, as their own good management. These are feelings which the agitators never fail to work upon, and turn to their own advantage. It is their policy to exaggerate evils and abuses, without ever referring to benefits. They never stoop to institute a comparison between the two, but, exposing only the former, denounce the whole system, on which both depend, as odious.

The division of medical labour appears to be absolutely essential to the progress of science; and if not enforced by law, it maintains a sort of spontaneous existence. Its first origin was in this way: men were unable to cope with the vastness of the subject—the studies subservient to it, anatomy, physiology, medicine, surgery, midwifery, and many others, each of them most extensive, form together so appalling a list, that no man could hope to reach celebrity, perhaps scarcely to obtain mediocrity, in each; it happened therefore instinctively, that they followed separate departments of it: one chose medicine, another surgery, and a third midwifery. In actual practice it has gone still further: these individual subjects being too wide for any one to follow out thoroughly, many persons have selected particular branches, by the cultivation of which they might be able to add to the stock of knowledge, and obtain reputation for themselves. This is not only conducive to the advance of

science, but is also a necessary result of that advance. Each subject becoming more complicated and extended, a smaller number can satisfactorily be embraced by one man. Look at the schools of former times, in which the same person was deemed qualified to give instruction on a great variety of subjects—anatomy, surgery, medicine, and chemistry, not uncommonly devolving upon one lecturer; but in the present advanced state of our knowledge, who is there that, with any credit to himself, or any advantage to his class, can undertake to instruct in two of these subjects? So fully convinced are our examining courts of the impropriety of the attempt, that they refuse to take certificates for more than one subject from the same person. What stronger argument than this can be required to show that a division of professional labour is essential to the welfare of medical science?

So clearly united are the interests of the public with those of medicine, that whatever can be shown to be beneficial to the latter must likewise profit the former; and there can be little doubt that the present condition of things is, in most respects, well adapted to serve both; and at the same time gives fair remuneration to the practitioner.

In thus advocating the division of medical studies and practice, we would not be understood as thinking it desirable that all who enter the profession should apply themselves to one particular subject. Far from it: the general practitioner is a highly important person, more so than either of the others, especially in small towns, where the pure physician and surgeon could not exist. He is on no account to be lowly esteemed; though perhaps unable to attain to so high a degree of knowledge in each branch as those who study but one exclusively, he is superior in the fact that his researches are more general:

he embraces the whole subject. Amid the tumult and hurry of practice, it is impossible for him, employed on so many occasions, and called in to a great variety of cases, to retain an accurate knowledge of all the branches of medicine; for instance, he cannot be supposed to maintain a sufficient acquaintance with anatomy and surgical tact to enable him to undertake difficult operations; he therefore gladly and wisely avoids risking his reputation, by referring such matters to the surgeon more practised in them. Neither can he vie, in certain departments of medicine, with the physician who has devoted particular attention to a given subject—as Prout to the diseases of the urinary organs. Yet he surpasses them both in the wider range of his information, and, being the most accessible, is the most useful person.

The divisions in the practice of medicine, moreover, give an opportunity to the lovers of its science to pursue whichever branch their fancy or interest dictates. They may choose the arduous but more profitable life of the general practitioner; they may engage in the learned studies of the physician, or they may give scope to their operative dexterity as pure surgeons.

It is often objected that, medicine and surgery being so closely united, it is absurd to attempt to separate them, and that the boundary is so ill defined that it is quite impossible to do it. We grant that the two are closely united, and that both are regulated by the same general principles—indeed, we unite them in the general practitioner, and allow that the same primary education is necessary to the student of both, it being essential to the good surgeon to have a knowledge of medicine, and *vice versa*; but, beyond this, each strikes out into his own particular course. The physician need not be so accurate an anatomist as would render

him a good operator; the surgeon requires not a knowledge of the more difficult subjects of medicine. How few of the eminent surgeons of this metropolis possess any knowledge of auscultation! How puzzled would most of the first physicians be to diagnose a tumor, or reduce a dislocation!

Thus it appears, theoretically as well as practically, that the present "tripartite" system is, in reality, well adapted to fulfil what is required. It seems an excellent device, and has the argument of self-origin in its favour. There is the practitioner, who may be consulted in all cases: and there are the pure physician and surgeon, who, having paid especial attention to certain branches of the science, may be called in to assist on the more perplexing points which occur in either department. They bear resemblance to the solicitor and the conveyancing and equity barristers, who have no thought of abolishing these legal divisions so profitable and convenient to themselves, but go on assisting one another without collision or discontent. So in medicine, neither party need excite the jealousy of the other; what the practitioner forfeits in one respect he gains in another. If the physician by his title be admitted to higher rank, his studies are required to be longer, and his difficulties in acquiring practice are much greater.

In this system, essentially good, there is doubtless much room for abuse, from the manner in which it is carried out, to which we may refer the unfavourable opinion which some persons have formed of it. There are no laws of sufficient firmness binding each in their several departments. In consequence of which laxity of discipline, there is an opportunity given for mutual encroachment. This is occasionally the case with regard to the physician, who, unable to subsist upon his own legitimate gains,

is induced to intrude upon the domain of the other two. He has been known to make his titles and certificates of superior education the means of enabling him to cull the cream of others practice. To these illicit proceedings our correspondent, Dr. Hull, frequently alludes, and most vexatious they certainly are to all who desire to uphold the interest and respectability of the profession; the more so, as there is no easy method of suppressing them. The public are no judges of disputes on medical etiquette, and, in fact, generally favour the wrong party, who gains credit in their estimation by being made the subject of scorn among his brethren, and is supposed to be a sufferer from their jealousy. He obtains notoriety by the conflict, and that is all he cares about.

It devolves, therefore, upon the profession to protect itself, and, by decided measures, to repudiate such persons. We fear this will not be effected by individual practitioners, who will rarely exercise sufficient stoicism to make the private sacrifice which is the constant result of a refusal to meet these irregulars. It is the duty of the Colleges of Physicians and Surgeons, by imposing strict rules of conduct upon their respective members, to maintain the divisions of the profession, and uphold the dignity of the art—to put an end to the present mode of obtaining cheap foreign diplomas, which aid very much in introducing these irregularities—and to contrive more effectual regulations for the protection of practitioners. We trust that those who are now occupied in framing the new charters of the Colleges of Physicians and Surgeons will give serious attention to this subject, and will endeavour, by some means, to compel the members of both to follow certain departments of practice, and thus prevent them from using

their diplomas to the injury of the general practitioner, as is now done in many provincial towns.

## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

DR. SEYMOUR, Vice-President, in the Chair.

June 14, 1842.

### *A Case of Local Tubercular Deposit upon the Surface of the Brain.* By ROBERT DUNN, Esq.

THE patient was a little boy, two years old, a fine intelligent child, who had been healthy from the time of his birth. He had suffered little during dentition. At eleven months he had twelve teeth, and could then walk alone. On the 7th of October he was first seized, and he died in about six weeks—on the 15th of November. He had awoke in the morning as usual, and was suddenly seized with a jerking or convulsive twitching of the left hand, but which did not extend beyond the wrist. Excepting this continued convulsive jerking of the hand, the child seemed to be quite well. There were no indications of general derangement. About a fortnight before the child had fallen down stairs, and from that time had been irritable and fretful. In about twenty minutes the jerking subsided. It returned the next morning for half an hour, and then extended to the elbow. The following morning there was a slight attack; and the next day passed without any jerking; but there was partial paralysis of the hand and arm, pyrexia, and general constitutional disturbance. He complained of pain in the head, and frequently applied the hand to the right temple. He had been freely purged at first. Leeches were now applied; counter-irritants; cold lotions and ice to the head, saline medicine and calomel, and James's powder every four hours. This course was pursued throughout the disease; and the ung. hydrarg. fort. was also applied to the arm-pits night and morning, but salivation was not induced. During the next four or five days, he had frequent attacks of the convulsions, not confined to the hand and arm, but involving the whole of the left side and lower extremity in convulsive agitation, with twitchings of the eye and angle of the mouth, the attack lasting for hours. He cried, and even screamed violently, towards the close of the fits, but was sensible throughout, and could, at times, be soothed by his parents. The attacks were followed by profound sleep for several hours, and the side was left partially paralysed. For about

a week he had no return of the fits, except occasional jerkings of the hand and foot. The paralysis was not persistent. He was dull and heavy, sleeping many hours; yet sensible when awake, and eager for food. He had a quick but weak and irritable pulse; dry, hot skin, and great thirst. He was then seized with a kind of cramp or spasm in different parts of the affected side, arm, and leg. The pain was most distressing, and seemed, as in ordinary attacks of cramp—which it closely resembled—to be, in some degree, relieved by active friction. After suffering in this way for three or four days, he was left with decided symptoms of effusion. The convulsions returned, attacking the right side in a similar manner in which the left had at first been affected. Both sides, and the whole body, indeed, eventually became affected with convulsive agitation, and the head, at the same time, drawn backwards. On the subsidence of one of these attacks he gradually sunk.

*Note of the post-mortem appearances, by Dr. Todd, of King's College.*—The scalp was pale and bloodless, like the rest of the body, which was much emaciated. The dura mater healthy. The vessels on the superficies of the brain were turgid with dark blood; but there was no sub-arachnoid effusion. The arachnoid cavity was natural. On the surface of the right hemisphere of the brain, under both the arachnoid and pia mater, there was a deposit of tubercular matter, disposed in patches of irregular shape and size, but the whole occupying a surface of about two inches square. The deposit was most abundant on the surface of the convolutions; but it nevertheless descended into the sulci between them, a circumstance which proved its connection with the deep surface of the pia mater. The cortical substance of the brain in contact with the tubercular matter was reddened, and greatly softened, and, on microscopic examination, evinced a nearly total destruction of the tubules in it, a great enlargement of the proper globules of the grey matter, and of the pigment granules which adhere to them. The softening extended a slight way into the subjacent white matter. On the edge of the left hemisphere, corresponding to the diseased patch of the right, a slight tubercular deposit had taken place in a similar manner, producing a red softening of the grey matter in contact, but not occupying more than half an inch square in surface. The ventricles contained more water than natural—about double—and did not collapse when laid open. The cerebral substance throughout, excepting at the diseased parts, was firmer than usual at the patient's age.

Mr. Dunn was of opinion that the fall which he had had operated as an exciting



cause in setting up diseased action about the tubercular deposit; and that the local affection—the simple twitching of the hand and jerking of the arm—was the consequence of the local membranous irritation thus induced. Irritation of the membranes and cineritious substance of the brain, he believed to be attended with convulsions, without decided or persistent paralysis; and that it requires the medullary matter to be involved to render the paralysis permanent. Admitting that red softening of the brain is the result of chronic inflammation of its substance, persistent paralysis, in the present case, was not to be expected until the inflammatory action had involved the medullary substance.

In briefly adverting to the phrenological bearing of the case, Mr. Dunn considered phrenology not in the light of a system of psychology, but of an attempt to elucidate the physiology of the brain, and that it was a duty incumbent on the medical inquirer to avail himself of every opportunity of bringing its pretensions to the test of experience, and that it was to post-mortem examinations of the brain, and to pathological investigation, more than to any other source, that we are to look for evidence in support or refutation of its dogmata.

In the present instance, the parents of the child, who know nothing of phrenology, had been forcibly struck with a change in the disposition of the child, which they had observed, for some months previous to the child's illness, to have been gradually taking place. From being a happy, placid, docile boy, he had become more and more petulant, self-willed, and obstinate. On the post-mortem inspection of the brain, the tubercular deposit was found to be situated on that part of each of the hemispheres where Gall and Spurzheim have located the organ of firmness. Among the first of the morbid effects arising from this tubercular deposit would be an irritating excitement in the grey substance, which would lead to an abnormal development of its functional power. Now obstinacy is an abuse of firmness, and if we associate the change of disposition which had taken place in the child with the structural disturbance induced by the tubercular deposit, the case might be fairly adduced in support of the hypothesis of Gall and Spurzheim, and of the locality which they have assigned as the site of the organ of firmness.

*Notes of a Case of Petechial Cow-pox, with Observations on the Development of the Hæmorrhagic Diathesis.* By DR. GEORGE GREGORY.

A child was vaccinated at the Small-Pox Hospital on the 19th May, 1842; to all appearance in perfect health. On the 4th

day, petechiæ were first seen. On the 8th day, extensive ecchymosis occupied the usual seat of areola, and the body was covered with petechial spots. On the 16th day, the scabs had begun to drop off, and all hæmorrhagic appearances had subsided. Two children of the same family had been vaccinated at the same time from the same lymph, who both passed through the disease in a normal manner. The child had not exhibited any previous symptom of constitutional weakness.

The author considers this to have been a case of true petechial cow-pox; not the coincidence of vaccination in an individual of hæmorrhagic tendency. He views it as an instance of the morbid matter of vaccine, usually so mild and so congenial to the human blood, proving poisonous to it, and developing the hæmorrhagic diathesis. It will be interesting, adds the author, to watch the future history of this child, to ascertain whether other morbid poisons have a like power of dissolving and deteriorating the quality of the blood, or whether this peculiarity attaches to the vaccine virus only.

The analogy subsisting between the phenomena of petechial cow-pox and petechial small-pox was noticed, and the frequency and severity of that form of variola, illustrated by cases. The freedom of the brain and nervous system, in severe cases of petechial small-pox, was alluded to, which conspired with the present case in rendering it probable that the hæmorrhagic state is developed by a morbid poison through some direct agency on the blood itself, independent of the brain and nerves.

Petechial cow-pox is believed by the author to be exceedingly rare. He had never seen any other instance of it, and had only heard of two others.

## WESTMINSTER HOSPITAL.

### STATISTICAL REPORT.

*To the Editor of the Medical Gazette.*

SIR,

DURING my residence of three years and a half at the Westminster Hospital, I have been in the habit of keeping a statistical record of the cases admitted into that institution, which I have found not only useful on many occasions as a source of reference, but interesting and instructive, from the mass of information gradually accumulated. Should you consider the following abstract from that register worthy a place in your periodical, you will oblige me by its insertion when an opportunity occurs.

I have, to a certain extent, followed the

arrangement adopted by Dr. Macleod in a report which he published a few years ago of the cases admitted under his care in St. George's Hospital, but which, I believe, he has of late discontinued.—I am, sir,

Your obedient servant,

JOSEPH H. BALLER, N.R.

Resident Medical Officer at the Westminster Hospital.

June 2, 1842.

*Abstract from the Statistical Register of Patients admitted and discharged during the year 1841, comprising also the Sex, Age, Disease, Result, and immediate Cause of Death.*

Admitted males	.	.	.	.	.	684
„ females	.	.	.	.	.	648
						—
Total	.	.	.	.	.	1332
				Males.	Females.	
Cured	.	.	.	381	345	
Relieved	.	.	.	110	134	
Incurable	.	.	.	18	22	
Irregular*	.	.	.	47	24	
Dead	.	.	.	50	46	
				—	—	
				606	571	
Under treatment				78	77	
				—	—	
				684	648.	

*Classification of Diseases.*

**Cerebral diseases, 45.**

Apoplexia, 7.—Dead, 1.

Hemiplegia, 4.

Epilepsia, 8.—Dead, 1.

Phrenitis, 1.—Dead, 1.

Cerebral Congestion, 7.

Cephalæa, 5.

Hydrocephalus, 2.—Dead 2.

Delirium tremens, 3.—Dead, 2.

Tumor Cerebri, 3.—Dead, 2.

**Various organic affections of encephalon, 5.**

**Diseases of nervous system, 30.**

Hysteria, 19.

Hypochondriasis, 4.

Neuralgia, 4.

Chorea, 3.

**Affections of fauces, 17.**

Tonsillitis 13.

Ulcer of throat, 4.

**Otalgia, 2.**

**Affections of respiratory organs, 135.**

Laryngitis, 4.—Dead 1.

Broncho-pneumonia, 16.—Dead 6.

Pleuro-Pneumonia, 6.—Dead 2.

Bronchitis, 38.—Dead 4.

Phthisis, 54.—Dead 17.

Catarrhus, 8.

Pleuritis, 3.

Empyema, 1.

Pertussis, 2.

\* This comprehends those discharged for irregularity of conduct, or refusing to follow the directions of the medical officers.

Pulmonary Apoplexy, 2.—Dead 1.

Gangræna Pulmon. 1.—Dead 1.

Organic affections of heart, &c. 20.

With dropsy, 4.—Dead 1.

Without dropsy, 11.

Pericarditis, 2.—Dead 1.

Diseased Arteries, 2.

Aneurism of aorta, 1.—Dead 1.

Various diseases of abdominal viscera, 98.

Various forms of dyspepsia, 28.

Gastritis (subacute), 4.

Hæmatemesis (vicarious), 5.

Hæmatemesis (à morbo jecoris), 2.

Scirrhus pylori, 2.—Dead 2 (one being complicated with malignant tuber of the liver).

Enteritis, 1.—Dead 1.

Gastro-enteritis, 1.

Hæmorrhœa, 1.

Diarrhœa, 5.

Colica accidentalis, 8.

Colica à plumbo, 7.

Hepatitis (chronic), 8.—Dead 1.

Hepatitis (with dropsy), 8.—Dead 1.

Hepatitis (acute, terminating in abscess), 1.—Dead 1.

Icterus, 5.

Peritonitis (chronic), 4.—Dead 2.

Peritonitis (post partum), 1.

Mesenteric Disease, 1.—Dead 1.

Tumor Abdominis, 1.

Disease of Colon, 1.

Disease of Rectum, 1.

Diseased kidneys with dropsy, 14.—Dead 5.

Dropsy after scarlatina, 1.

Renal calculi, 7.

Vesical calculus, 1.

Diseased prostate, 2.

Incontinence of urine, 3.

Retention of urine, 3.

Stricture, 10.

Diseases of uterine system, 89.

Amenorrhœa and Chlorosis, 45.

Dysmenorrhœa, 5.

Leucorrhœa, 10.

Menorrhagia, 7.

Uterine hæmorrhage, 4.

Tumor uteri, 4.

Procidentia uteri, 7.

Ovarian dropsy, 1.—Dead 1.

Malignant disease of ovary, 2.—Dead 2.

Cancer uteri, 2.

Cancer pudendi, 1.—Dead 1.

Corroding ulcer of uterus, 1.—Dead 1.

Diseases of muscular and fibrous tissues.

Rheumatism (acute), 30.

Rheumatism (sub-acute and chronic), 90.

Synovial inflammation of knee-joint, 30.

Synovial inflammation of bursa at knee, 6.

Synovial inflammation of shoulder-joint, 2.

Periostitis, 2.

Febris adynamica, 13.—Dead 4.

Febris continua, 28.

Febris intermittens, 1.

Erysipelas (traumatic), 15.—Dead 7.

Erysipelas (idiopathic), 4.—Dead 1.  
 Phlegmon, 3.  
 Tumores, 7.  
 Scrofulous Diseases, 17.—Dead 1.  
 Inflamed absorbents, 5.  
   Gangræna senilis, 3.—Dead, 2.  
   Abscess, 28.  
   Ulcers, 74.  
 Cutaneous diseases, 27.  
   Lepra, 4.  
   Psoriasis, 2.  
   Eczema, 7.  
   Impetigo, 2.  
   Porrigo, 4.  
   Lichen, 1.  
   Prurigo, 2.  
   Rupia, 4.  
   Lupus, 1.  
 Scarlatina, 1.  
 Anæmia, 5.  
 Cachexia, 4.  
 Rachitis, 2.  
 Tænia, 1.  
 Poison by Nux Vomica, 1.  
 Syphilis, 19.  
 Secondary syphilis, 22.  
 Gonorrhœa, &c. 37.  
 Fistula in Ano, 3.  
 Fistula in Perinæo, 2.  
 Recto Vaginal Fistula, 1.  
 Hamorrhoids, 5.  
 Cancer scroti, 1.  
 Osteo-sarcoma, 1.—Dead.  
 Fungoid disease, 1.—Dead.  
 Anthrax, 1.  
 Burns and scalds, 14.—Dead, 5.  
 Diseases of eye and appendages, 21.  
 Various diseases which cannot well be arranged under any class, 16.  
 Simple fractures of leg (men), 18.—One dead from erysipelas.  
 Compound fractures of leg (men), 4.—One died on the third day from gangrene.  
 Fractured arm (men) 3.  
 Fractured cranium, 2.—Dead, 1.  
 Fractured ribs, 6.  
 Simple fractures of leg (women), 5.  
 Fractured arm (women), 3.  
 Fractured ribs (women), 2.  
 Dislocations.  
   Hip, 1.  
   Shoulder, 1.  
 Diseases of bone, 9.  
 Diseases of joints (including hip, 12), 23.—Dead, 2.  
 Hernia (strangulated).  
   Femoral, Operation, 1.  
   Hernia (reduced), 2.  
 Tetanus (traumatic), 1.—Dead.  
 Contractions from  
   Burns, 2.  
   Club-foot, 2.  
   Cut-throat, 1.  
 Accidents, contusions, sprains, &c. 204.—Dead, 5.

*Abstract, showing the diseases, &c. which caused death, and the several ages of the patients.*

Apoplexia, 1.—Age, 60.  
 Epilepsia, 1.—Age, 23.  
 Phrenitis, 1.—Age 25.  
 Hydrocephalus, 2.—Ages, 5, 6.  
 Delirium tremens, 2.—Ages, 40, 50.  
 Tumor cerebri, 2.—Ages, 19, 47.  
 Laryngitis, 1.—Age, 54.  
 Broncho-pneumonia, 6.—Ages, 31, 40, 40, 41, 53, 54.  
 Pleuro-pneumonia, 2.—Ages, 7, 23.  
 Bronchitis, 4.—Ages, 29, 45, 55, 68.  
 Phthisis—males, 10; females, 7; total, 17.  
   Ages, 18, 19, 22, 23, 24, 27, 28, 30, 32, 32, 34, 42, 50, 50, 54, 60, 66.  
 Gangræna pulmonum, 1.—Age, 55.  
 Pulmonary apoplexy, 1.—Age, 61.  
 Organic affection of heart, 1.—Age, 51.  
 Pericarditis, 1.—Age, 34.  
 Aneurism of aorta, 1.—Age, 39.  
 Scirrhus pylori, 2 (both females).—Ages, 43, 45. (In one it was complicated with malignant tuber of the liver).  
 Organic disease of liver (with dropsy), 1.—Age, 35.  
 Organic disease of liver (without dropsy), 1.—Age, 31.  
 Acute inflammation of liver terminating in abscess, 1.—Age, 21.  
 Chronic peritonitis (tubercular), 2.—Ages, 17 each.  
 Enteritis, 1.—Age, 34.  
 Mesenteric disease, 1.—Age, 3½.  
 Dropsy, with diseased kidney, 5.—Ages, 11, 30, 52, 57, 60,  
 Ovarian dropsy, 1.—Age, 52.  
 Malignant disease of ovary, 2.—Ages, 30, 50.  
 Corroding ulcer of womb, 1.—Age, 30.  
 Cancer pudendi, 1.—Age, 50.  
 Adynamic fever, 4.—Ages, 21, 35, 48, 58.  
 Erysipelas (traumatic), 5.—Ages, 21, 25, 38, 58, 78. (Three of these patients were attacked with the disease whilst in the hospital).  
 Erysipelas (idiopathic), 1.—Age, 23.  
 Phlegmonous erysipelas, 2.—Ages, 47, 63.  
 Medullary sarcoma, 1.—Age, 24.  
 Gangræna senilis, 2.—Ages, 70, 79.  
 Diseased spine, 1.—Age, 19.  
 Tetanus (traumatic), 1.—Age, 32.  
 Osteo-sarcoma of lower jaw, 1.—Age, 62.  
 Scrofulous disease of shoulder-joint, 1.—Age, 65.  
 Diseased hip-joint, 3.—Ages, 7, 7, 48.  
 Burns and scalds, 5.—Ages, 2, 2, 3, 4, 4.  
 Fractured skull, 1.—Age, 15.  
 Accidents, fatal, 5.—Ages, 9, 33, 40, 70, 79.  
 Total number of deaths during the year 1841, 96.

Table showing the various ages of the

patients admitted during the year 1841, and the number of deaths in each decennial period.

	Admitted.	Deaths.
Under 10 . . .	60 . .	12*
Between 10 and 20 . . .	227 . .	8
„ 20 „ 30 . . .	343 . .	14
„ 30 „ 40 . . .	272 . .	17
„ 40 „ 50 . . .	203 . .	13
„ 50 „ 60 . . .	131 . .	19
„ 60 „ 70 . . .	72 . .	8
„ 70 „ 80 . . .	19 . .	5
„ 80 „ 90 . . .	5 . .	0
	<hr/> 1332	<hr/> 96

### NON-RESTRAINT SYSTEM†.

*To the Editor of the Medical Gazette.*

SIR,

ALTHOUGH I have frequently heard of the “puff direct,” the “puff oblique,” the “puff insidious,” &c. &c. I am not sufficiently acquainted with their nice distinctions and generic differences, and am, therefore, compelled to solicit your assistance, as in your editorial capacity you are doubtless required to have an intimate knowledge of the whole category of these inflations, in classifying the following paragraph which appeared in the last number of the *Lancaster Gazette* :—

#### *Meeting of Medical Officers at the Asylum.*

“The Association of Medical Officers connected with Lunatic Asylums has this year held its meeting at the Lancaster Lunatic Asylum. The meeting took place on Thursday and yesterday. Amongst the eminent persons present, were, Dr. Corsillis, of Wakefield; Dr. Hitch, of Gloucester; Dr. Oliver, of Carlisle, &c. &c. Our neighbour, Dr. De Vitre, the Physician to the County Establishment, also takes a warm interest in the progress of the Association, the humane purpose of which is to benefit the condition of persons afflicted with insanity. Whilst, of course, by improving themselves, the members individually and collectively labour to the same end.”

Without waiting your decision, or staying to bring your attention to the bombastic unintelligibility of the concluding sentence of the above paragraph, I may remind you that it admirably accords with the object it professes—that of reporting the proceedings at a meeting in a Lunatic Asylum.

\* Of the deaths under ten years, five were the result of burns or scalds.

† Although we have thought it right to give the letter of M. A. W., yet we must guard against the supposition of our concurring in his opinions. If the non-restraint system has within his knowledge produced the effects alluded to, let him come boldly forward and state the facts in his own name.—ED. GAZ.

That such a meeting was contemplated was thus very perspicuously advertised in the *Lancet* :—“The next annual meeting of the Association of Medical Officers of Hospitals for the Insane will be held at Lancaster, at mid-day, on Thursday, the 2d of June next. Any visitor intending to favour the Association with an essay or paper, or to introduce any particular subject for its consideration, would oblige the local committee by informing them, through me, Mr. S. W. M. Hitch, of Gloucester, of such intention, to facilitate the arrangements being made for the meeting.” The style inferential or *ambigu-comique* so tastefully adopted in this notification, from which no one could derive any precise information regarding the theatre of this learned Association’s performances, proves how well qualified was its author to understand and sympathise with the incoherence of thought, the cunning and secresy, of “a mind diseased.” Perhaps to the peculiar character of that advertisement may be attributed the remarkable circumstance that the occurrence of this highly important national conference was unknown both to our lay and professional community until the announcement appeared in the above erudite report. To whatsoever cause this ignorance may be assigned, it seems pretty clear that we learn three valuable facts from this report :—1. That a meeting purporting to be “the Association of Medical Officers of Hospitals for the Insane” was held at the Lancashire Lunatic Asylum. 2. That “amongst the eminent persons present” three names only could be mentioned, each of which is unknown to the annals of scientific or practical medicine—the only true tests of professional eminence. 3. That “our neighbour, Dr. De Vitre, takes a warm interest in the progress of the Association;” a piece of information of incalculable value!

Having given you a summary of the information supplied by this report, I would occupy a few more lines to show what this learned paragraph has failed to do. It has even failed to inform us, except by “&c. &c.” whether the meeting was composed of any other—eminent or insignificant—than the three persons named. It has not stated, as it might have done, that, notwithstanding the vast number of lunatic asylums throughout the kingdom, and each having, of course, its medical officer, this meeting of “the Association” was distinguished by an almost total absence of members! It does not tell us of the subjects discussed at the meetings, or the result of the deliberations! It does not tell us that this meeting was held at a public institution, which was established and is supported by the County funds! It does not inform us that, although this meeting was convened for the ostensible purpose of determining the most reasonable, practicable,

and philosophic mode of attempting to cure insanity—a subject in which every medical practitioner is deeply interested—and although in their advertisements they seem to imply that visitors were expected to be present; still, these servants of the county purse had not the courtesy to invite any of the members of the faculty of Lancaster to join in the discussion! It does not state that, being anxious for the attainment of all possible information on the topic for which the meeting was convened, they did not solicit the co operation of their professional “neighbours!” Why does it not supply these deficiencies? Why did these *eminent persons* and stipendiary officers not invite a general investigation of their mode of treatment? Were they afraid of the discussions bringing to light circumstances which must strike at the very vitality of their newly-adopted “non-restraint system?” Were they apprehensive of a discussion eliciting the number of suicides which have happened since the publication of their report in which the non-occurrence of such a calamity, since the institution of the emancipatory system of treatment, was so loudly boasted? Were they fearful of it being shown how frequently the coroner has had to listen to the details of the inmates’ ingenuity in the easy accomplishment of self-destruction under the *humane* mode of treatment? Did they apprehend some discomfiture from an *exposé* of the late mutinies in the wards, and of the attempts which have been made by the patients to enforce the “restraint system” on the keepers, and to liberate themselves? Did they shrink from an explanation of their coercing the ringleaders, and forcing them to the cold bath? If such be their motives for secrecy, their attempts at concealment have been fruitless. As they have adopted a mode of treatment of most problematical propriety, the institution of which is entailing such amazing expense upon the county, and the result of which they appear so desirous to hide from the public, it becomes the imperative duty of every member of the profession to watch their proceedings with suspicion, so as to protect the country against a mischievous and wasteful expenditure of its funds, and to guard the lunatics against a wanton exposure of their lives to the dangerous treatment of hypothetical medicine.—I am, sir,

Your obedient servant,  
M. A. W.

Lancaster, June 11, 1842.

## DR. RAMSBOTHAM'S REJOINDER.

*To the Editor of the Medical Gazette.*

SIR,  
MUCH as I dislike controversial letter-writing, I feel there are some points in Dr.

Churchill's communication to you last week which require a few remarks from me in reply.

Dr. Churchill disavows any intention of making in his statistical tables a comparison between the practice of different individuals; and declares that his sole intention was “to collect together as many recorded facts as possible, and from them to form a double estimate; first, of the frequency of certain cases, and, next, of their fatality.” He adduces a sentence in his preface to prove his acknowledgment that his tables, “at the utmost afford only an approximative estimate, owing to the drawbacks upon their exactness;” and he thought, when he wrote them, that this quotation, together with some other remarks in the body of the book, would be “a sufficient safe-guard.”

Although Dr. Churchill may have had no intention of leading his readers towards any invidious comparisons, the effect would evidently be, as I before stated, both to give an erroneous notion of the practice of some individuals, and to induce foreigners to entertain an unfavourable opinion of British skill in general. It is with the effect alone, and not with the intention, that we have to do.

I am quite aware that most of the tables in Dr. Churchill's recent work are, as he states, reprinted from a volume which he published last year; and on their first appearance I made the same objection to them, in conversation with medical friends, which I do now. I did not, indeed, think it necessary to state those opinions publicly, nor to address Dr. Churchill on the subject at that time. When, however, they were put forth again in an avowedly systematic treatise, I considered it right to call the attention of the profession to them.

In his letter to you, Dr. Churchill proceeds to say, “as to the positive errors of which Dr. F. H. Ramsbotham accuses me, the first is rather curious. Of twelve forceps cases given by his father, four were seriously complicated, and, according to Dr. F. H. Ramsbotham, ‘should not be classed as common forceps cases.’ Now, as regards one of these, I quite agree with him, and, therefore, as I suppose he would have done, I omitted it; yet he adduces this as an error. On his principle surely the error consisted in my not omitting the whole.” Why Dr. Churchill should have omitted one of four seriously complicated cases, and included the three others, does not appear at all plain; and I must take the liberty of repeating that the error consists in his having admitted into a list, from which an average of deaths was to be formed, any selected cases at all. By doing this the result becomes so inaccurate as to render the whole calculation valueless. In confirmation I need only adduce Dr.



Churchill's statement of my father's forceps cases, and, in opposition to it, a transcript from my letter of the week before last. According to Dr. Churchill my father's *reported* forceps cases are eleven; and three women died. According to my father's case-books, out of 104 consecutive forceps cases, which have occurred to him since August 1820, four women died.

Dr. Churchill continues: "Lastly, I am accused of misquoting the number of cases of ruptured uterus. I have stated that there are ten; Dr. F. H. Ramsbotham states that there are thirteen, of which three recovered. Now on referring to my copy of Dr. Ramsbotham's, senior, work, he gives ten cases of ruptured uterus; one of ruptured vagina; one in which the vagina was suspected to be ruptured; and three in which the bladder was ruptured; and *all are stated to have died*. Moreover, Dr. Ramsbotham, senior, in his observations on rupture of the uterus, explicitly states that 'every case of rupture of the uterus that I have seen has sooner or later proved fatal.'

"I cannot explain this discrepancy except by supposing that a second edition has been published lately, which I have not seen, but which contains the additional cases. But if it be so, though I am not aware of it, Dr. F. H. Ramsbotham must have known that I quoted the first edition correctly."

Had I alluded to any second edition I should certainly not have acted in so uncandid a manner as to have kept back such a material circumstance; but I referred to the second volume, which I knew to be in Dr. Churchill's hands, because from it he has quoted the number of breech and shoulder presentations, and convulsions.

The first part of my father's work was published in 1821; and in that part the sentiments Dr. Churchill has transcribed will be found. His second volume came out in 1832; and at the end of that volume he gives the three cases of recovery, which I adverted to. He introduces them by the observation that when his first part was given to the public all the cases he had *then* seen had proved fatal; and that the three fresh cases had occurred within twelve months after its publication.

I must apologize for taking up so much of your space, but I was anxious to acquit myself of the suspicion of having penned my former letter, while I must have known that Dr. Churchill had quoted my father's book correctly.—I am, sir,

Your obedient servant,

FRANCIS H. RAMSBOTHAM.

14, New Broad Street, June 20, 1842.

## CASE OF COLITIS.

*To the Editor of the Medical Gazette.*

SIR,

CONCEIVING some notice of dispensary cases, and others, may not be uninteresting, I shall from time to time send such, should you deem them worthy of insertion.—I am, sir,

Your obedient servant,

JOHN LENEY.

Bray, Wicklow, 1842.

In the month of April, the wind east and north-east, seven cases of pleuro-pneumonia occurred at the dispensary. This class of people rarely apply when first seized, so that all the cases had advanced to the second stage, or hepatization. The disease existed in all in the right lung, and occupied much about the two inferior thirds of that lung. The treatment consisted in bleeding, blistering, and mercury carried to salivation. But one case proved fatal, a man aged sixty-six years, who obstinately declined submitting to any treatment.

I merely mention these cases as corroborative of the much greater frequency of pneumonia occurring in the right than in the left lung. In the same month six cases of deep-seated whitlow presented (in one alone could the patient account for his, being the prick of a thorn). Five required to be freely opened; in one mortification and caries of the first phalanx took place, requiring removal of the metacarpal bone.

At the same time, strumous ophthalmia, cynanche parotidea, and a rheumatism, more particularly lumbago and sciatica, prevailed.

### *Colitis.*

S. Murray, æt. 40 years, spare habit, by trade a shoe-maker; has had occasional attacks of colitis for the past ten years. On the 1st of May, 1842, felt indisposed, sense of chills, nausea, and anorexia; took some opening medicine, and applied to me on the evening of the 3d of May.

*Symptoms.*—Nausea and vomiting, incessant hiccup, features sunken, pulse small and contracted, frequent tenesmus, with much pain throughout the transverse colon.

℞ Hydrargyri Chloridi, gr. x. ; Pulv. Opii, gr. iss. Extr. Gentianæ, q.s. ut ft. Pil. ij. fut; statim reliquam post horas tres.

Enema emolliens, and fomentations to the part.

4th, 8 A.M.—Symptoms much as yesterday; has had a bad night from pain, hiccup, vomiting, and tenesmus.

V. S. ad 3xvj. ; Hirudines, xiv. parti dolenti.

℞ Hydr. Chloridi, gr. x.; Pulv. Opii, gr. j. Extr. Gentianæ, q.s. ut ft. Pil. ij. statim sumat unam post horas duas alteram.

Enema Aquæ Tepidæ, lb. ij.

11 o'clock, A.M.—Symptoms much diminished; has had sense of heat, not pain, in transverse colon; occasional hiccup, and great thirst; bowels acted freely after enema; retention of urine; water drawn off with catheter.

℞ Hydrarg. Chloridi, gr. xii.; Pulv. Opii, gr. j.; Ext. Gent. q.s.; ut ft. Pil. iv. Sum. j. 2da horâ; Mustard Cataplasma over transverse colon.

4 o'clock, P.M.—Bowels acting freely; motions bilious, and offensive; sense of heat still exists in colon; urine drawn off by catheter.

11 o'clock, P.M.—Continues to improve; has had much griping pain; passes urine; is salivated.

Haustus Olei Ricini.

5th. — Hiccup occasionally; otherwise much better.

℞ Spt. Lavand. Comp. ʒj.; Ammon. Arom.; Tinct. Hyoscyam. aa. ʒss. Mist. Camphor. q.s. ut ft. Haust. statim sumend.

Continued to improve up to the night of the 13th, when, having incautiously exposed himself to cold, and eaten too freely, he was seized with acute pain at caput coli, sigmoid flexure, and throughout the rectum, with great tenesmus, extreme pain, and restlessness; retention of urine, and inflammation of neck of the bladder; hiccup and tympanitis.

Hirudines, xvij. Perineo; urine drawn off. Hyd. Chloridi. gr. v.; Pulv. Opii. gr. j.; M ft. Pil. statim sumend.

14th, 10 A.M.—Pulse small and contracted; symptoms much as in the night.

V.S. ad ʒxvj.; Rept. Pilul.; urine drawn off; blood much buffed and cupped.

2 o'clock P.M.—Suffered much from retention of urine; tympanitic distension of abdomen and tenesmus; failed in introducing the catheter, the attempt to pass the neck of bladder giving much pain.

V.S. ad ʒxvj.; Enema Tinct. Opii. gtt. xxxv. in aquæ tepidæ. ʒiv.

5 o'clock P.M.—Slept for two hours; feels much better; complains alone of distension of the bladder; now introduced the catheter with facility, removing fully one quart of water.

Enema Aquæ tepidæ lbj.

11 o'clock P.M.—Bowels acting freely;

has made water; gums sore; perspiration taking place.

15th.—Had profuse perspiration throughout the night, and is free from pain. From this time he gradually recovered, not having had an untoward symptom afterwards.

## ADMISSION OF MEDICAL PUPILS TO LUNATIC ASYLUMS\*.

*Admission of visitors at Bethlem.*—Although the governors may, perhaps, be unwilling to concede the principle of allowing an increased number of medical pupils to frequent the wards of Bethlem Hospital, for the sole purpose of study, and of thus qualifying themselves to become afterwards more useful to the community; there prevails little or no disposition at present, to prevent visitors from seeing the interior arrangements of that excellent establishment. The Secretary of State, or the President, may give an order of admission to visitors; or a Governor may, at all reasonable hours, conduct strangers over the house; and in this way, sometimes as many as fifteen or twenty persons, even including ladies, have perambulated the wards at the same time, some of whom, perhaps, only came to gratify idle curiosity. In former years, during the existence of the old hospital in Moorfields, a visit to Bedlam used to be considered one of the usual sights of London, constituting a strange propensity truly; but nevertheless, then a very prevalent one; and all introduction at that time required, was the payment of a very small sum of money at the door, almost as if at an ordinary exhibition. According to an account of Bethlem Hospital, published in 1783, by the chaplain of the institution, the Rev. Thomas Bowen, a revenue of at least £400. per annum, was obtained from the indiscriminate admission of visitants to the hospital, whom very often, an idle and wanton curiosity drew to that region of distress. As each person paid about one penny, by the calculation of the Committee of the 12th March, 1742; about ninety thousand visitors were sometimes admitted in one year. The crowd was often so great, that to prevent disturbances, the porter was annually made a constable, and attended with the other servants to keep order. But this abuse became so general, and the injurious consequence to patients so apparent, that in 1770, all indiscriminate admission visit to Bedlam was most properly forbidden. And although desirous to admit pupils at Bethlem Hospital, under proper regulations, for the purpose of pursuing their studies: I am very far from considering that the idle visits of strangers, from

\* From Dr. Webster's "Observations," &c.

meremorbid curiosity, should be allowed, since that cannot be beneficial; particularly, as the patients themselves often dislike being paraded before their fellow-creatures, in some degree like the inmates of a menagerie.

*Dr. Combe on the admission of pupils to hospitals for lunatics.*—The safety and even advantage to the patients, from the admission of pupils, is fortunately not a matter of mere conjecture. I had the good fortune to attend the first clinical course ever given on the subject of insanity, by the celebrated Esquirol, at the Salpêtrière at Paris in the spring of 1819. I anticipated confusion and excitement, from the indiscriminate admission of all who chose to attend (for there was no restriction whatever), but instead of that, the patients seemed amused and interested; and during the whole three months I never saw one instance of any excitement, or other unfavourable result. On the contrary, the visit was expected with pleasure by many, and Esquirol's kind, friendly way of addressing them, and then turning round, to make a good-natured remark to the students, had a manifestly soothing and beneficial effect. Of course, the students behaved with propriety and good-humoured forbearance also, and consequently were not regarded with suspicion, which used to be excited in the olden time by the admission of visitors, who come to stare as at wild beasts. The number of students who went round with Esquirol at that time, averaged from thirty to fifty, and no confusion of any kind occurred. I visited Charenton and Ivry with Esquirol in the autumn of 1831, and up to that time, he gave the same testimony concerning the advantages, to both patients and pupils, from the above plan; and I believe, at Bicêtre also clinical lectures have been given, and students freely admitted, for some years. I have devoted much attention to insanity, ever since I attended Esquirol's clinique in 1819, and every day's experience has added to my conviction of the necessity, even for the advantage of the patients, of admitting pupils to our asylums, under proper regulations. The attending physician would, of course, prohibit access to any who might in his opinion be injured by it, just as is done in the case of acute diseases in ordinary hospitals. If there was any chance of an overflow of pupils (an unlikely thing in my opinion), it would be easy to divide them into several classes, each to have admission to certain wards only. It is no advantage to a student to have scores of patients under his eye at the same time. Infinitely more instructive is it, to confine his observations to such a number, as his mind can easily embrace, so as to digest and comprehend their peculiarities. To benefit by his opportunities, he must not only observe,

but think and compare; and in doing so, the physician may help him most efficiently, by a few judicious remarks.

*Admission of students at St. Luke's.*—Again, at St. Luke's, notwithstanding one of the objects proposed at the foundation of that charity, according to the original address in 1751, was "of introducing more gentlemen of the faculty, to the study and practice of one of the most important branches of physic;" medical pupils are not now admitted at the hospital, having upwards of 200 lunatic patients, however eminently qualified the present medical officers may be, for conveying instruction to young men, on the management and curative treatment of mental diseases. But exclusive as the system actually prevailing at St. Luke's may appear, the Governors of that charity were much more liberal, in allowing pupils to visit the patients in the hospital, at the middle of the eighteenth, than they are in the nineteenth century. This retrograde movement is singular, since at the period mentioned, Dr. William Battie, a celebrated and talented physician, then attached to St. Luke's Hospital, states in the preface to a Treatise on Madness, which he published in 1758, that "by an unanimous vote, the Governors signified their inclination of admitting young physicians, well recommended, to visit the hospital, and freely to observe the treatment of the patients confined." And, moreover, the author also says, he "offered to the perusal of the gentlemen, who honoured him with their attendance, the reasons of those prescriptions, which were submitted to their observation." Nothing could be better adapted for the instruction of young medical practitioners, than the method then pursued at St. Luke's, and much credit is certainly due to Dr. Battie for his zeal, as likewise to the Governors for granting the above permission. The publication alluded to, and perhaps also, the innovation respecting the admission of pupils to the wards of St. Luke's, involved the author in a dispute with Dr. John Munro, physician to Bethlem Hospital, who affixed to a small volume he wrote, entitled "Remarks on Dr. Battie's Treatise on Madness;" the line from Horace, "O major, tandem parcas, Insane, minori;" whereby the wits of the day ever afterwards designated the Doctor as *Major Battie*. The laugh may have then been on the side of the Bethlem physician, but utility and reason belonged to St. Luke's. When or wherefore this permission, to visit the wards of that hospital, was withdrawn; or if still in force, why it is not acted upon, I know not, although the circumstance deserves explanation. But I hope a new era will soon arrive, when more liberal sentiments regarding lunatic asylums, being made subservient to the ad-

vancement of medical education, may prevail, particularly at public institutions like St. Luke's and Bethlem Hospitals.

*Suicides in lunatic hospitals.*—Respecting the rarity of suicides in public asylums, it is worth mentioning, that out of 4216 lunatics received into Bethlem Hospital from the 31st December, 1822, to the 1st June, 1842, five instances of the kind have occurred, or one suicide in 843 insane persons: whilst half the patients admitted were discharged cured, and only 215 deaths are reported, or within a fraction of 5 per cent. These facts speak volumes in favour of Bethlem Hospital; and if similar results are met with at other lunatic establishments, there cannot be any question as to benefits conferred upon the insane, by public institutions appropriated solely for their reception and curative treatment.

SUDDEN DEATH FROM SPONTANEOUS RUPTURE OF THE SPLEEN.

A SOLDIER, who had suffered several attacks of intermittent fever, was found dead, and was thought to have been murdered. In the examination of the body, the abdomen was observed to be swelled as in ascites, and a puncture gave vent to a large quantity of blood. The spleen was extraordinarily enlarged, and had assumed an oblong shape from above downwards, occupying all the left side of the abdomen, displacing the liver and stomach to the right. On its anterior surface was a fissure, two inches in length. The splenic vein was much dilated, the arcolæ of the spleen also much enlarged, this was especially remarkable in the neighbourhood of the fissure. The condition of the spleen was at this point truly aneurismal, and the mechanical engorgement which the organ had undergone was so great that rupture took place.—*Journal des Connaissances Medico-Chirurgicales.*

ROYAL COLLEGE OF SURGEONS.  
LIST OF GENTLEMEN ADMITTED MEMBERS.

- Friday, June 10, 1842.*
- C. J. Symonds.—W. Taylor.—R. Roberts.—T. W. Damant.—G. T. Roper.—W. H. King.—J. M'Carthy.—J. Armstrong.—J. Russell.—W. B. Tomkin.—A. Peat.—R. Palmer.—G. C. Stackpoole.—H. Evans.
- Monday, June 13, 1842.*
- D. S. Penrice.—C. Whitton.—J. Wilson.—J. H. Pollard.—E. Sheppard.—E. D. Hudson.—J. Richards.—R. F. Snape.
- Friday, June 17, 1842.*
- S. T. Frost.—W. Spear.—A. Alsop.—W. H. Davids.—H. Hayes.—E. R. Owen.—C. W. Mann.—W. S. Shiell.—W. Reynolds.—J. R. Crawley.—W. M. Powell.—J. L. Robinson.—A. Fairchild.

APOTHECARIES' HALL.  
LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, June 10, 1842.*

J. R. Pope, Manchester Square.—J. N. Tre-sidder, Cornwall.—F. Wallis, Hartfield, Sussex.—W. Langston, Shropshire.—T. B. Anstie, Chard, Somerset.—W. Chapman—Arthur Kitt, Sheerness, Kent.—C. C. Taylor, Rochdale, Lancashire.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, June 4, 1842.

Small Pox .....	5
Measles .....	41
Scarlatina .....	30
Whooping Cough .....	20
Croup .....	13
Thrush .....	2
Diarrhoea .....	4
Dysentery .....	0
Cholera .....	1
Influenza.....	0
Typhus .....	21
Erysipelas .....	4
Syphilis .....	2
Hydrophobia.....	0
Diseases of the Brain, Nerves, and Senses ..	151
Diseases of the Lungs, and other Organs of Respiration.....	235
Diseases of the Heart and Blood-vessels ....	18
Diseases of the Stomach, Liver, and other Organs of Digestion .....	49
Diseases of the Kidneys, &c.....	6
Childbed .....	4
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	3
Rheumatism .....	0
Diseases of Joints, &c. ....	8
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat .....	129
Old Age or Natural Decay.....	67
Deaths by Violence, Privation, or Intemperance .....	30
Causes not specified .....	4
Deaths from all Causes .....	847

METEOROLOGICAL JOURNAL.

June	THERMOMETER.		BAROMETER.	
Wednesday 15	from 50 to 70		30.04 to 30.06	
Thursday . 16	46	72.5	30.00	30.01
Friday . . . 17	50	67	30.05	30.10
Saturday . 18	49	65	30.03	29.91
Sunday . . 19	44	66	29.78	29.70
Monday . . 20	48	67	29.74	29.71
Tuesday . 21	49	68	29.66	29.64

Wind, N.W., N., and N. by E. on the 15th; N. W. and W. by S. on the 16th; E. and N.E. on the 17th; E., E. by S., and N.E. on the 18th; S. by W. and W. on the three following days.

The 15th and two following days cloudy, with frequent sun-shine; since generally showery; thunder and lightning on the 19th.

Rain fallen, .55 of an inch.

ERRATUM.—Page 467 col. 1, line 16, for "on the day following," read "on the day week following."

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL  
OF

Medicine and the Collateral Sciences.

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FRIDAY, JULY 1, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

By DR. WATSON.

*Anasarca; its consideration resumed. Distinction of chronic general dropsy into cardiac and renal. Characters and signs of each of these varieties. Treatment.*

We were yesterday occupied with the circumstances of that remarkable disease, which has never received a good, distinctive name, but which is sometimes called *Bright's* disease, after the distinguished living physician who first recognized and described it, sometimes yellow degeneration of the kidney, sometimes granular degeneration. I endeavoured to represent to you, by words and by drawings, the morbid appearances that are most commonly noticed in the several stages of the complaint: which morbid appearances may, one and all of them, be traced (as I think) to congestion of the kidney; to the detention of blood in that organ, and to the physical consequences of such detention. I spoke of the symptoms which appear *essential* to the malady, and which consist in certain striking changes in the urine and in the blood of the patient. I mentioned also the symptoms which are *incidental* to the renal disease. But of one of those incidental symptoms, or secondary consequences, I postponed the full consideration till to-day: I mean the *anasarca*, with which most commonly, yet by no means always or necessarily, it is complicated.

This is, for several reasons, a very important symptom. It is usually the first thing that prompts us to suspect, and to

inquire after, the renal malady. It was through his researches into the relation subsisting between chronic dropsy and the conditions of the urine, that Dr. Bright was led to the discovery of the associated affection of the kidney. The dropsical accumulation adds greatly to the patient's distress, and sometimes constitutes nearly the whole of it. It adds proportionally to his danger. Moreover, it is that consequence of the renal disorder over which our curative measures have the most control. Indeed, under this complication we have, practically, to consider the remedies of the dropsy, distinct from the remedies of the renal change.

In most cases, at the outset at least of the dropsy, the skin is dry, and the urine is scanty: and the anasarca is observed to increase, or to decrease, as the quantity of urine diminishes or augments. The aqueous fluid, which should escape from the surface and through the kidneys, collects in the subcutaneous cellular tissue. As the disorder advances, the tendency to effusion of serum through the sides of the blood-vessels is probably increased, not only by the sluggish movement of the blood in the veins, from progressive debility of the heart, but also by the cause of that debility, the thin and watery condition of the blood itself; a condition which I yesterday pointed out to you as one of the most uniform and striking effects of the primary disease.

And here I again take up the subject of anasarca and general dropsy. You will remember that, in the earlier part of the course, I entered somewhat fully into the general pathology of dropsies. At the same time I promised you that I would afterwards, and when you were better prepared to understand them, endeavour more fully to explain some grand distinctions which have been found to exist between different forms of general dropsy. Having now, at last, brought before you all the organic changes which are apt to give rise to anasarca, I am in a condition to redeem that promise. In



doing so I shall probably have to remind you of some things which you have already heard from me.

*Anasarca*, you will please to recollect, signifies the filling up of a considerable part, or of the whole, of the subcutaneous cellular tissue, with serous or watery fluid: and when to this is added a collection of liquid in the large serous cavities also, we call the complaint *general dropsy*.

It is obvious that this condition may exist, and in nature it does exist, in various degrees: from slight infiltration of the cellular tissue, scarcely noticeable, until, after some hours passed in the upright posture, it accumulates in visible oedema about the ankles—to the other extreme, in which the integuments are every where stretched to the utmost, even to bursting; the insteps bulging upwards; the legs and thighs enormously enlarged, cylindrical, unshapely, and exhibiting partial vesications; the surface of the trunk of the body capable of being kneaded and moulded like dough; the skin of the penis distended, and in consequence of its confinement by the frænum, twisted and circumvolved so as materially to impede the outward passage of the urine; the scrotum, as big as a child's head, preventing the miserable patient from approximating his thighs, or lying upon either side; the hands swollen; the face and neck bloated. With all this, the peritoneum is generally full of liquid, and at length the pleuræ; and as the scene is about to close, there is water in the ventricles of the brain, and an anasarcaous pia mater.

Now from whatever cause this watery condition of the whole body may arise, the effects resulting from the presence of the water are the same. And of what do patients in this state usually complain? Why of shortness of breath, and palpitation of the heart; of a sense of impending suffocation if they attempt to lie down, or actively to bestir themselves; of tightness and distress across the epigastrium, relieved somewhat by eructation, augmented by food and drink; of weight and stiffness of their limbs; and, sometimes, of drowsiness.

The explanation of all this is easy and obvious. The shortness of breath may be accounted for on various grounds: by oedema of the lungs themselves, a state that is revealed to us through auscultation; by water in the pleuræ; by the pressure upwards of the diaphragm which embarrasses still more the labouring heart and lungs: and this upward pressure is increased by any kind of distension or repletion of the stomach, diminished when the stomach is collapsed and the upright position is maintained. The heaviness and want of pliability of the unwieldy limbs are, like the rest of these phenomena, purely mechanical. All parts

are oppressed by the unnatural load of water.

But we must look beyond the dropsy: and enquire whether the complaint has set in suddenly and simultaneously, with febrile disturbance, invading all the districts of the body at once, and quickly reaching its present degree; or whether it has crept upon the patient slowly and by stealthy steps: whether it has had any obvious or probable exciting cause; or whether it has approached insidiously we know not whence or why: whether (in a word) the case be one of active and febrile dropsy, or of chronic and passive.

Now setting aside, for the present, any more particular consideration of the acute or febrile form of general dropsy, and contemplating those forms only which are chronic, we find that all, or nearly all of them, may be arranged in two great classes; those which depend upon disease or debility of the heart forming one class, those which depend upon disease of the kidney constituting the other. To these classes we accordingly apply the terms *cardiac dropsy*, and *renal dropsy*. They are often combined in the same individual; but taking the pure cases of each form, we may proceed to enquire into their peculiar features, how they may be distinguished, and what differences of treatment they may require.

And first of cardiac dropsy.

The mode in which disease of the heart may occasion general dropsy has been sufficiently explained already. We infer that the dropsy, in a given case, has this origin, if we find that thoracic symptoms, such as cough and dyspnoea, preceded the dropsy: or if we perceive direct signs of cardiac disease, such as distended jugular veins, irregular movements of the heart, unnatural impulse, altered sounds: or if we trace the history of some previous acute disease affecting especially the left side of the thorax: or if we learn that the patient has formerly suffered acute rheumatism: or if the patient's age is so much advanced as to make it probable that some of those organic changes in the heart and large blood-vessels are in progress, which are almost natural in the decline of life. And our inference is confirmed if there be no discoverable indication of renal disease.

But we see many persons who labour unequivocally under organic disease of the heart, yet who survive, even for many years, without becoming dropsical. The interesting question therefore arises, of what kind of heart disease is dropsy a consequence and symptom? You already know the answer. It is such disease as offers a certain amount of permanent obstruction to the passage of the venous blood. Hence dropsy is especially associated with dilatation of the right chambers of the heart. It would not be

correct to say that the anasarca is *dependent* on such dilatation, for the dilatation itself is at once an effect and a sign of impeded transmission of blood from the right side of the organ. Nor is such dilatation a necessary attendant on the general accumulation of water. The impediment may be sufficient to gorge the right cavities, while it is yet too slight in amount, or too recent in duration, to have dilated them.

What, then, are the physical conditions which oppose to the blood in the veins such an impediment as we are now considering? The two great vital organs contained within the thorax, the heart namely and the lungs, form different parts of one common mechanism, the object of which is to supply every tissue of the body with blood that has recently been purified by exposure to the air: and these organs, thus closely related in their functions, are moreover so reciprocally dependant, that structural disease occurring in the one tends to produce disease, sooner or later, in the other also.

And I wish you again to observe the order and direction in which disease is, almost always, propagated from one part of this apparatus to another. It is a backward direction—opposite, I mean, to the course of the blood. There are, strictly speaking, two hearts, which lie side by side in respect to their anatomical position, but which, reference being made to their vascular intercommunication, are really separated from each other by the lungs. The great veins precede, and the great arteries follow, this chain of connected organs. Disease occurring in any one part of the chain becomes a cause of consecutive disease in the part immediately behind it. And this law obtains, as I have shewn you before, in regard to the several chambers of the heart, considered as a single organ.

Thus, structural disease situated at the aortic outlet of the heart, and of such a kind as to hinder the exit of the blood from the left ventricle, gives rise to permanent changes in that ventricle; to hypertrophy with, or less commonly without, dilatation. The hypertrophy is strictly a compensating and conservative change; and when it is exactly proportioned to, and keeps pace with, the impediment which has given it birth, so as precisely to balance and counter-vail it, no delay takes place in the stream of arterial blood, and the injury is, as yet, confined to the left ventricle. That chamber is remodelled, and adapted to its purpose by the *vis medicatrix nature*; and no other evil manifests itself than, perhaps, some slight encroachment and pressure upon the neighbouring parts, in consequence of the augmented volume of the heart.

So long as the mitral valve remains healthy and effective, it offers a barrier of

protection against the extension of the disease in the direction which is retrograde to the course of the blood. But at length, in most instances, the stress becomes sensible farther back. The left auricle and the pulmonary veins become choked and distended; the blood is detained in the lungs. Then commences *dyspnœa*: at first occasional only, whenever the heart is tasked with the conveyance of a greater quantity of blood in a given time than usual, as in brisk movements of the body, or sudden emotions of the mind; or when it is oppressed by circumstances that diminish the capacity of the chest; by a full meal, therefore, by flatulent distension of the stomach and intestines, by the recumbent posture. Afterwards the shortness of breath becomes more or less constant and distressing.

Now this loaded and embarrassed state of the lungs, even when it is permanent and has reached a considerable degree, may exist without materially interfering with the functions of the right or venous heart; for the pulmonary plethora may be relieved by increased secretion from the bronchial mucous membrane. *Dyspnœa*, even when it has become habitual, may precede for some time any appearance of dropsy.

At last, however, the effects of the original evil augmenting and extending, the right ventricle also becomes unable duly to propel its contents into the pulmonary vessels; it continues morbidly full, is first distended occasionally, then permanently, and at length really dilated; and with that dilatation we have a turgid venous system, of which we see a part in the prominent veins of the neck.

In this way then may be explained a series of symptoms which you will often witness, and be consulted about, in persons who are growing old. You will find irregularity of the pulse; preternatural impulse perhaps of the heart; occasional shortness of breath; large crepitation, habitually audible in the lower portions of the lungs; more or less expectoration, sometimes tinged, sometimes even loaded, with blood. Eventually the ankles begin to swell; and the patient (if his life is not cut short earlier in some other way) becomes by degrees decidedly and universally dropsical.

Many of the direct signs of diseased heart may exist, therefore, while there is no anasarca: intermissions and irregularity in its movements, palpitation, the impulse proper to hypertrophy. But when dropsy has supervened, we may expect also the signs which denote dilatation of the right chambers. The heart is heard and felt to beat beyond the precordial limits; the pulsations become feeble and unequal, if they were not so before; the patient is liable to fluttering palpitations, to extreme and panting *dyspnœa* on the

slightest exertion, even on taking food into the stomach, or adopting the recumbent posture; his skin assumes a dusky hue, and his lips and extremities are apt to be livid.

In these cases the anasarca first becomes manifest about the ankles. During the earlier stages the oedema disappears in the night, and returns towards the next evening. It is sometimes confined, for a long while, to the legs; but ultimately it creeps up towards the trunk of the body; the loins and flanks become doughy, the scrotum fills, and water collects in the serous bags of the abdomen and thorax. In extreme cases the dropsy is universal, pervading the cellular tissue of the head and face and upper limbs.

As the accumulation of serous liquid is commonly gradual, the reticular tissue, partly perhaps through maceration, but chiefly from continued pressure and stretching, loses its elasticity; and the oedema is soft, and *pits* readily.

Sometimes, the fluid continuing to increase, the cuticle is raised by it, and large vesications take place on the limbs; or some part of the cellular tissue sloughs, and a breach of surface is made, and the fluid drains off by this vent in great abundance, to the signal relief of the patient. This beneficial accident furnishes us with a valuable practical hint.

Such, then, is the consummation of disease commencing in the left heart, and working its gradual way, through the lungs, to the right heart. But the obstacle may originate at a less distant link in the chain. The circulation may be checked, first of all, in the intermediate lungs: and it may be worth our while to consider, for a moment, the relations which subsist between general dropsy, and certain *pulmonary* diseases.

Whenever, in pneumonia, a large portion of one or of both lungs becomes impervious to air and to blood—or when pleurisy fills one side of the thorax with liquid, which, by its pressure, shuts out both air and blood at once from one-half of the respiratory apparatus—the egress of the blood from the right heart, and, therefore, from the venous system, must be checked. We might expect that dropical effusion would be the result of these changes; and in truth it does sometimes occur. That it does not happen more frequently is to be attributed, I believe, to the free evacuations and the strict abstinence, which are early put in force in those complaints, and which relieve the venous plethora before it produces effusion.

So, again, lungs that are hollowed out into large cavities, or rendered solid over a wide space by numerous tubercles, are manifestly incapable of admitting into their vessels from the right ventricle the ordinary quantity of venous blood. In these cases, however, the whole mass of blood is dimi-

nished, and kept within the limit which does not imply distension of the veins, by the constant agency of various causes; by the imperfect nutrition consequent upon abdominal disease; by the sometimes copious expectoration; by the wasting diarrhoea; by the profuse nocturnal sweats. Accordingly anasarca is an unusual symptom in pulmonary phthisis, or shews itself in the latter periods only of the disease, in the form of oedema of the legs: and its occurrence then is mainly owing to the debility which affects, in common with the other muscular parts of the body, the moving organ of the blood.

The pulmonary disease which more commonly and certainly than any other, though often very slowly, leads to dropsy, is *emphysema* of the lungs. I shewed you, some time ago, that in this morbid condition many of the smaller blood-vessels of the lung become gradually obliterated; and when the disease is extensive and advanced, large portions of the organ are visibly white and bloodless. Meanwhile, the nutrition of the body is not impaired; the same quantity of blood continues to be returned towards the heart, but it finds not a ready entrance into the pulmonary blood-vessels, when delivered from the right ventricle. A certain amount of accumulation becomes habitual in that chamber, and in the great veins; and at length the capillary vessels feel the mechanical congestion, and more or less anasarca ensues.

So much for dropsy that is purely cardiac. Let us next consider the circumstances from which, during the life-time of the patient, we draw the conclusion that the dropsy he exhibits is of renal origin.

There is nothing, that I know of, very peculiar or distinctive in the characters of the anasarca itself. When the renal complaint sets in suddenly, and with acute symptoms, dropsy usually supervenes *soon*. So also, during its more chronic progress, anasarca is apt to shew itself, or to increase, whenever local inflammation, or febrile disturbance, happens to arise. The more rapid and copious the effusion, the less do the dropical parts pit upon being pressed. It may be said also of this renal form of dropsy, that accumulation in the larger serous cavities is not, in general, a prominent feature.

If we find, upon due scrutiny, no material or adequate embarrassment of the respiratory functions, no deviation from the natural sounds of the heart, no derangement of its regular movements, no alteration in the force of its pulsations, or in the space over which they can be felt and heard, no distension of the large veins of the neck—then we have strong reason for suspecting that the anasarca is connected with some vice of the kidney.

But we cannot infer, from the *presence* of

heart-symptoms, that the kidney is free from disease.

Our judgment is guided, or assisted, in some degree, by the *complexion* of the patient. When general dropsy depends upon disease of the heart, the cheeks and lips are occasionally florid, often purplish or livid, frequently dusky and loaded. Sometimes (as in chlorotic women, where the heart may be temporarily distended without any positive organic disease, and the blood is thin and poor) the face and mucous membranes are pale: but in the renal variety of dropsy there is a very characteristic hue; an evident lack of red blood, indeed, in the capillaries, but withal an unhealthy dingy sallowness, significant to a practised eye of some deep-seated alteration of structure.

Our suspicion that the kidney is the organ primarily in fault is strengthened, if we trace certain accidents in the history of our patient. An attack, for example, of illness, attended, perhaps, with temporary swelling of the body and disturbance of the urinary functions (acute dropsy, in short), soon after some exposure, under unfavourable circumstances, to the influence of cold; either applied to the external surface, or to the stomach by a draught of cold drink. For, as I told you yesterday, there is reason to believe that in *acute* dropsy is often laid the foundation of those peculiar changes in the kidney which, since they were first pointed out by Dr. Bright, have been chiefly studied in their connection with *chronic* dropsy. That as rheumatic carditis may occur, and become latent as to its effects for some time, and yet implant the germs of future cardiac dropsy, so the stress or strain which befalls the kidney in cases of febrile anasarca, may set on foot a morbid process that long works silently and unobserved, but at last declares its operation by symptoms; the reproduction of the dropsy in a more chronic form being the most significant symptom of all. The acute attack may have been forgotten; there may have been no obvious (though there may have been ill-understood) indications of the renal affection; and its existence has been, therefore, unsuspected.

The discovery of intemperate habits would also be of importance in aid of our diagnosis, if these same habits had not a like influence in causing disease of other organs as well as of the kidney, and especially of the heart. There may, however, be no such episodes as these in the patient's history. The dropsy may have come on immediately after some exposure, or obviously injurious influence, yet not with acute symptoms, and in a temperate subject: in which case it is probable that the renal disease had pre-existed in a latent state; or the anasarca may have stolen on by degrees, without any apparent cause.

But the most conclusive evidence of the

renal disease is to be found in the conditions of the urine: which were fully explained to you in yesterday's lecture. I shall therefore only add four rules upon the subject, which have been laid down by Dr. Christison, and generally acquiesced in by Dr. Prout. These rules assert that organic disease, or granular degeneration, or granular disorganization of the kidney—all which phrases we may condense into the compendious expression "*Bright's kidney*"—is present. 1. In most cases of febrile dropsy, including those which are consequent upon scarlet fever. To this proposition I have already given my full assent. 2. In all cases of anasarca, where the oedematous parts are elastic, and do not pit upon pressure. I am not so sure of this rule. I believe that the firmness of the oedematous parts has relation rather to the rapidity with which the effusion has taken place, than to the local origin of the dropsy. In proportion as the accumulation in the cellular tissue has been chronic and gradual, does the swelling receive and retain indentations from external pressure. 3. In most, or all cases of dropsy attended with diuresis, provided the urine be not saccharine. Such cases, Dr. Christison truly remarks, are far from being uncommon. Of course the diuresis here spoken of is such as occurs independently of diuretic remedies. 4. In all dropsies associated with urine of a very low specific gravity (say below 1010), and not exceeding the natural standard of quantity, whether it be albuminous or not. To the last two rules there are probably very few exceptions.

The dropsy which is dependent upon "*Bright's disease*" yields, not unfrequently, to treatment; but it is prone to recur. Of the renal disease itself the prognosis is, no doubt, very unpromising. Yet I do not think so despairingly of these cases as I once thought; and as many think. I have known a few instances of what seemed complete recovery after well-marked symptoms of the disorder. Certainly success enough has followed careful treatment to encourage us to use all diligence in prosecuting such remedial measures as are already known, and in devising new ones.

I have been speaking of dropsies that are purely cardiac, and of dropsies that are purely renal. But I have already told you that disease of the heart, and disease of the kidney, frequently go together; and I have endeavoured to estimate their relation, in such cases, to each other. When both organs are structurally affected, the disposition to dropsical accumulation must evidently be augmented. What share they have, respectively, in producing the dropsy, it would be very difficult, and practically it is not very important, to determine.

In chronic general dropsy of a purely car-



diac origin, the kidneys, being sound, offer the most convenient and eligible channel for carrying off the superfluous water. Diuretic medicines, therefore, rank among the most important of our curative expedients. When they fail to act, or prove insufficient for the purpose sought, we next have recourse, the state of the bowels permitting, to drastic or hydragogue purgatives.

Diuretics are notoriously of most uncertain operation; sometimes completely answering our wishes, oftener perhaps disappointing them altogether. When the urine is strongly acid, and deposits, on cooling, a sediment like brick-dust, it may be well to try, at first, the alkaline diuretics, and particularly the salts of potass. Nitre added to the common saline draught; or a combination of the acetate and bicarbonate of potass; or the bitartrate in small doses; or the iodide; or the liquor potassæ. In my own experience the tincture of squills also has seemed to correct this superacid and turbid condition of the urine, while it increased its quantity.

Digitalis sometimes promotes, in a remarkable degree, the flow of urine; and this, in my judgment, is its most useful and manageable property. Small quantities of the tincture, or of the infusion, may be added to other formulæ. Or the powdered leaves may be combined in pills. But one of the best modes of exhibiting digitalis for this purpose is to give larger doses of the infusion, half an ounce, for example, in some cordial water, at intervals of four or six hours, till three doses have been taken in succession; and then to pause and note its effects; and to repeat the three doses, or not, accordingly.

The spirit of nitrous æther, and the compound spirit of juniper, have both of them well-marked diuretic properties, and may, with propriety, be added to most of the liquid formulæ for augmenting the discharge of urine. And, as vehicles for more active, or more concentrated ingredients, those vegetable infusions or decoctions should be chosen which are reputed to possess similar virtues; such as the decoction of broom tops, or of juniper berries, or of winter green, or the infusion of buchu.

Squills, turpentine, the tincture of cantharides, are drugs of a more stimulant nature, more peculiarly adapted to cases in which there is no febrile disturbance, and the kidneys are obstinately inactive.

Sometimes a combination or farrago of diuretic substances proves more efficacious than larger doses of any of the ingredients administered singly: and the operation of some of these combinations is undoubtedly quickened and exalted, in many instances, by the addition of mercury. A fluid drachm of the officinal solution of the bichloride in

each dose of a mixture; or small quantities of calomel or of blue pill when the medicines are given in a solid form. A very useful pill of this kind, much recommended by the late Dr. Baillie, consists of three or four grains of the pilula hydrargyri, mixed up with one grain of the dried powder of squills, and half a grain of the dried leaves of digitalis; to be given twice or thrice a day. Dr. Baillie states that squills and digitalis are much less effectual by themselves, than when combined with mercury.

In choosing purgative drugs to aid the effect of diuretics in carrying off the dropsical fluid, or to take their place when these fail to act, we select those which produce copious and watery discharges from the bowels. A combination of jalap and cream of tartar has been long and deservedly esteemed for its excellent operation in this way. Gamboge is also a good cathartic. It may be given two or three times daily, in grain or two-grain doses, with a drachm of cream of tartar, suspended in two ounces of peppermint water. Or half an ounce of cream of tartar, mixed in six ounces of peppermint water, may be administered in one dose every morning. Croton oil, and elaterium, are still more powerful evacuants of serous liquid from the intestines. One or two drops of the former, and from a quarter of a grain to a grain of the latter, will be about a proper dose. It is astonishing how much relief to the feelings of the patient, and how great a diminution of the dropsical symptoms, are sometimes obtained by these active cathartics. Patients will earnestly beg for a repetition of them, even when their operation is attended, for the time, with considerable pain or sickness, and much general distress.

In addition to these measures for the removal of the collected water, attention must be paid to the actual condition of the heart. If the dropsy has been the result of anæmia, or of cachexy of the system, you must endeavour to strengthen your patient, and to repair his impoverished blood, by nutritious food and tonic medicine, and especially by the administration of steel. I told you formerly that preparations of iron have an exceedingly good effect, oftentimes, even in cases of organic disease of the heart, consisting in dilatation and tenuity, and consequently weakness of its muscular parietes.

On the other hand, if there be violent palpitations of the heart, with a strong heaving impulse, you may appease the excessive action, and afford sensible comfort to the patient, by applying leeches, from time to time, to the præcordia.

Of the renal variety of chronic general dropsy, whether pure or mixed, the treatment is less accurately ascertained. The uncertainty which has perplexed men's



minds respecting the nature of the renal disorder, has extended, in some measure, to their choice of remedies for it.

Whenever (in renal dropsy) acute symptoms and febrile disturbance occur, much relief may be expected from the abstraction of blood. When drawn from a vein, it usually shows the buffy coat. The existence at the same time of pain in the loins, would indicate the propriety of applying cupping-glasses to that part. Nevertheless, the impoverishing effect of the disease itself upon the blood, and the probable dependence of some of the more distressful and alarming symptoms upon the thin serous condition of the circulating fluid, as well as the increased facility with which the dilute blood may transude outwards—these are circumstances which should induce every cautious practitioner to have recourse to this heroic remedy, only when it is clearly *demand*ed.

One definite object, in the renal as well as in the cardiac variety, is to remove the dropsical fluid, from which the danger and the suffering often chiefly proceed. But it is a more nice question, when the *kidney* is involved in the disease, how this is to be accomplished. Can we, with the same safety as in cardiac cases, employ diuretics? It has been thought that we cannot. As the primary morbid state of the kidney is certainly often, and probably always, a state of congestion, it has been feared that direct diuretics, such as are calculated to cause, keep up, or augment congestion of the kidney, or to stimulate and irritate that organ, would be likely to accelerate the disorganizing process of which it is already the seat.

Now, although these views are theoretical, and their justness has not yet been established by positive proof, you had better, when you can, observe the caution which they suggest. You had better endeavour to empty the distended cavities, and to relieve the loaded cellular tissue, through the bowels, or through the skin. Sometimes, however,—more often indeed than in cardiac dropsy—we have the untoward complication of irritable bowels, or habitual diarrhoea: and then drastic cathartics are inadmissible. But when this complication is not present, they are eminently useful.

Much benefit is sometimes derived from measures that act powerfully or steadily upon the cutaneous transpiration; and especially from warm, or hot-air, baths. The hot-air bath is, in many respects, preferable to the common warm-water bath, and even to the vapour bath. Upon the principle of heterogeneous attraction, the escape of the liquid from the surface of the body is more promoted by a dry heat than by water artificially raised to a high temperature, or even by an atmosphere made moist, as well as

hot, by vapour. The risk, moreover, of exposure to cold, and the inconvenience and hazard of fatigue, are much less: for the hot-air bath can be brought, with but little trouble or expense, to the patient as he lies in bed. I have often applied the *sudatorium* to patients labouring under renal dropsy, and they have obtained much relief from it: but the relief is seldom of itself sufficient, or of more than temporary duration. Still it is an expedient that should never be neglected; and in pursuance of the same indication, diaphoretic medicines should at the same time be diligently exhibited. Dr. Osborne states that when the renal disease has been uncomplicated with other organic mischief, he has always found the dropsy to disappear upon the re-establishment of the functions of the skin.

These measures failing—as fail they often will; and diarrhoea forbidding the use of drastic purgatives; or drastic purgatives and diaphoretics together proving insufficient, we *must*, even in renal dropsy, choose the least of two evils; or rather we must incur the risk of one possible and contingent evil, for the chance of obtaining what, if obtained, is a certain and positive benefit: we must endeavour to remove the dropsical accumulation by means of *diuretics*, whether these accelerate the progress of the disease in the kidney or not.

Such diuretics, therefore, are, in the first instance, to be selected, as seem the least likely to stimulate the kidneys injuriously. The bitartrate of potass has been found one of the most certain and useful. *Digitalis* also is esteemed safer, and therefore more proper for this purpose, than many others: and the simultaneous exhibition of these two has, perhaps, the surest effect of all.

When diuretic medicines act as we intend them to do, and increase the quantity of urine, they are commonly of great service by reducing the dropsical swelling. But they are apt to be very capricious and disappointing. In some unhappy cases of renal dropsy I have tried every known form and combination of diuretics, without augmenting the secretion by the kidneys. And sometimes, although a plentiful discharge of urine takes place, no impression is made upon the anasarca.

It is yet an unsettled question whether mercury be advisable, or even admissible, in these cases. The current of medical opinion sets against it; perhaps too strongly. It has been observed that salivation is apt to be produced by a small quantity of this drug; and to be unusually troublesome and severe, without bringing any commensurate advantage. I mentioned to you formerly Dr. Farre's opinion, that mercury has the property of rapidly destroying red blood: if so, it must be regarded rather as an ally,

than as an antagonist, of this malady. On the other hand, some patients have appeared to recover altogether, after passing through a furious salivation. One of the reputed virtues of the mineral is that it promotes interstitial absorption—a property which the changes apparent in the kidney in renal dropsy would seem to render valuable.

When internal remedies prove ineffectual, and outward applications to procure sweating miss their aim, we turn to those mechanical expedients which (in either variety of general dropsy) often afford ease, and prolong life, and may even sometimes, perhaps, achieve a cure.

I have told you that the tense and stretched integuments occasionally give way; the cellular tissue sloughs, and from the breach thus made water wells copiously forth, and great relief ensues. Sometimes, though very rarely, the whole of the accumulated liquid has so escaped, and the dropsy has not reappeared. The sore has healed, and the natural cure has been complete.

This spontaneous mode of draining away the liquid has been imitated by art. For the unwieldy legs become painful as well as cumbrous; the integuments threaten to inflame, or to mortify; and if we can diminish the tension by removing a portion of the included fluid, we avert or lessen this danger. The penis and scrotum also in the male, and the labia pudendi in the female, become, in many cases, enormously swollen, and hinder the exit of the urine, which is therefore spilled upon the tumid parts, rendering them erythematous and raw, to the grievous aggravation of the patient's sufferings.

Now seeing that vesications sometimes form upon the dropsical limbs, and give vent, in some degree, to the fluid, practitioners have been induced to follow that indication by exciting artificial blisters. But they are highly dangerous; leading often to gangrene of the surface thus inflamed. Within my recollection it was the custom to make incisions, with a lancet, in the œdematous legs. These gashes seldom healed again; but degenerated into sloughing sores; and not unfrequently they hastened the dissolution of the patient.

A vast improvement upon these expedients is the modern practice of acupuncture, which consists in perforating the integuments here and there with a fine needle.

It is surprising how much fluid may be let out in this way; and how much relief may be afforded by this trifling operation. The liquid trickles rapidly forth; and I have known it soak through the patient's bed, and form a pool on the floor of the room. In one instance, a physician being the patient, the limpid fluid which thus oozed from a puncture in the thigh was caught, and

collected in a glass, by means of a little gutter of oiled silk. It was found that ninety minims, or a fluid drachm and a half, escaped in a minute; which is at the rate of eleven ounces and a quarter in an hour: and this drain went on for upwards of four hours.

The surface on which these punctures have been made sometimes becomes red; erysipelas supervenes, which it is difficult to arrest, and the patient sinks. In some of these cases the same event would probably have occurred, even although no punctures had been made, from mere tension of the integuments, and the progress of the disease. When such appearances present themselves, the affected limb should be kept in the horizontal position; and strips of linen, wetted with a solution of goulard, should be applied to the inflamed surface.

Under the old system of incisions it was found (and reason would teach us to expect this) that there was more hazard of sloughing when they were made on the legs, than on the thighs. The risk is much less when needles are used. But even these punctures are not to be made without attending to certain precautions. They should not be too near each other: an inch and a half, at least, should intervene between them. Neither should they be too numerous, nor too deep. The depth must depend upon the circumstances of the case; and especially upon the place where the puncture is to be made. The needle must not be pushed so deep as to penetrate or wound any fascia; for the danger of subsequent inflammation would thereby be increased.

The peritoneum may, at the same time, require to be emptied in the same mechanical way, by help of a trocar. I am always loath to recommend tapping, until the symptoms actually call for it, and until all other means of dispersing the water have been tried in vain. But the circumstances that warrant or demand the performance of the operation, the dangers that attend it, and the means of obviating these dangers, were fully pointed out when we were on the subject of ascites.

By whatever means we may succeed in getting rid of the dropsy, there will still remain (except in the comparatively few cases that are unconnected with organic disease, and depend simply upon debility and anæmia) the necessity for guarding against the reaccumulation of the water, by remedial measures addressed to the faulty organs. You may sometimes keep the disease of these organs in check, even when you cannot cure it.

In cardiac dropsies, besides the medicines already specified, undeviating temperance and regularity of life must be enjoined; and the patient should carefully, and always, avoid all active motion or exertion of the body, and all strong emotion of the mind;

whatever, in short, might tend to hurry the circulation. You will scarcely be able to enforce this prudence, without plainly showing the patient the risk he will incur by its neglect.

In the renal variety of the disorder, in addition to the appropriate remedies already enumerated, particular attention must be paid to the avoidance of all exposure to cold and vicissitudes of the weather, and to keeping the surface of the body warm. Such patients should be constantly clothed in flannel from head to foot. To those who are able to choose their place of abode, I should strongly recommend resort to a warm climate. Some benefit may also be hoped for from counter-irritation—blisters or issues to the loins.

The diet in the chronic forms of the disease should be nutritive, but unstimulating. M. Solon suggests that if, in the renal cases, urea be detected in the blood, the patient should be restrained from too animalized a diet. Dr. Budd has had the same thought, and has put to the test, I believe, in the Hospital-ship Dreadnought, the utility of withholding all articles of food that contain azote. I have found this restriction entirely useless in one painful case, in which it was fairly enforced. In fact, the principle of such restriction appears to be wrong: the urea is furnished to the blood, not in the primary assimilative process, but in that which is secondary and destructive.

One more point, and I have done. Much unnecessary penance used to be imposed upon dropsical persons, by stinting their allowance of drink. It was natural to suppose that the accumulation would increase in proportion to the quantity of liquid swallowed. But experience has shown this opinion to be erroneous, and

*"crecivit indulgens sibi dirus hydrops"*

has ceased to be more than a poetical doctrine. The patient may safely be allowed to exercise his own discretion in this respect. When the peritoneum is full, distress is apt to ensue upon the distension of the stomach by drinks; but this source of suffering is soon discovered and avoided. The sick man is better able than his physician to judge which evil is the greatest; the torment of unslaked thirst, or the discomfort that may be produced by its immoderate indulgence.

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SIR JAMES CLARK ON REFORM.

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[We give the following extracts as containing the chief points in Sir James Clark's recent pamphlet on Reform. It will be seen

that his views differ considerably from those we advocate.]

In any scheme of medical reform, and more especially in any legislative measure, it is surely the general practitioners, that is, the great body of medical practitioners, that require the chief consideration. By far the largest part of the population is under their care, including that portion who are least capable of judging of the merits of their medical attendants, and to whom it is the especial duty of the legislature to extend its protection.

As it has been stated, in the evidence to which I have just referred, and which will not be disputed, that to practise any branch of medicine successfully requires a knowledge of the whole science, it necessarily follows that every medical practitioner should pass through the course of medical education deemed necessary for the general practitioner; and that those who desire to confine themselves exclusively to medicine or surgery should first take the degree which qualifies for general practice, and then devote a certain period in acquiring that additional experience and practical knowledge, and that manual dexterity, which may qualify them for consulting-physicians or operating-surgeons. There will always be a sufficient number of the profession who will possess a more extended general education, and a greater amount of medical instruction and experience than could at present be required or expected of the whole body of medical practitioners, and who will consequently take the higher degree of Doctor of Medicine. From this class will naturally be selected Physicians and Surgeons to Hospitals, Lecturers in the Medical Schools, Examiners, &c.; in short, this class would alone be eligible to such honourable appointments as will prove a sufficient stimulus to ensure an abundant supply of highly educated men as successors to the physicians and surgeons of the present day. And not only this: the facilities for acquiring instruction in every branch of science are increasing so rapidly, that the proportion of medical men who will take the higher degree, will, no doubt, augment from year to year; and, judging from the progress which has been made in our own day, it will not be considered a very extravagant prediction that in the course of another half century the smaller proportion only of medical graduates will stop at the lower degree.

The first and most essential step in medical reform is, unquestionably, the establishment of a good and uniform education for the general practitioner; the second, that every practitioner in medicine, whatever may be the department for which he is des-

trained, should qualify for the duties of the general practitioner—that is, should take the degree of Bachelor of Medicine, or whatever title he may be designated by,—as a preliminary step to the higher degree of Doctor of Medicine.

This I consider one of the cardinal points of medical reform, and one against which I have never heard a single sound argument advanced.

As by this regulation all would pass through the first degree, so all would be eligible for the second or higher degree, by devoting an additional period to acquiring a practical knowledge of their profession, and submitting to the prescribed tests. Such a regulation would, at once, do away with all just cause of jealousy between the two grades of the profession, while the knowledge that at any future period he might take the higher degree, would prove a powerful stimulus to the general practitioner to keep up his knowledge with the progress of medical science. This relation of the two grades of medical practitioners being established, there could be no good reason why men so closely connected by education, and so intimately associated in the exercise of their profession, should be ranged in different institutions. It is surely more natural, and would, I think, be infinitely more beneficial to the profession, that the whole should be included in one institution. Make two classes of members in the united body. Let those who take the higher degree constitute the fellows, and be alone eligible as officers for conducting the affairs of the corporation; while the general practitioners, or bachelors of medicine, would constitute the great body of members, and have, under such regulations as upon consideration might be deemed proper, a vote in the election of the officers. As this rule would apply to all, and the fellowship would be open to every member of the body who chose to qualify himself for it by taking the higher degree, no one could complain of being excluded from the fellowship.

The whole profession would thus be united into one body, while the present distinction of physician, surgeon, and general practitioner, would be maintained. All just cause for the discontent at present existing in the profession would be removed. The “one faculty” and “representative” system would be realized without, in the least degree, interfering with the present distinctions: such distinctions, on the contrary, would be established upon the only legitimate ground—that of more extended acquirements. So far from such an arrangement being calculated to lower the physician and surgeon to the level of the general practitioner, as has, I think, been most erroneously urged, both

classes would be raised by it. The more the educationer of the general practitioner is raised, the higher, doubtless, will be that of the consulting physician and surgeon.

That such a scheme of medical reform would prove most beneficial to the profession generally, cannot, I think, admit of doubt. It would secure a good and uniform education to every member of the profession; it would knit the whole in one bond of union, and by opening to every member who chose to qualify himself the highest degree in the profession, and the highest offices in the body corporate, it could not fail to raise the character of the whole. It would elevate the general practitioner in his own estimation, and in that of the public. The public would know that every member of this body must have had a good education; while the practitioner himself would feel that he formed an integral part of the great body of his profession, the highest honours and offices of which he might attain by qualifying himself for them, and by conducting himself as becomes the member of an honourable profession. He would have at once a direct stimulus to diligence in his profession, and to upright conduct; while the knowledge that misconduct might lead to expulsion from such a body would produce its effect upon those on whom the dread of disgrace operates more powerfully than the stimulus of honourable reward.

A college of medicine so constituted, representing, as it would, the whole profession, could not fail to exercise a powerful moral influence over its members. It would constitute a court of honour from which there would be no appeal. Such a court has long been wanted in the medical profession, and would tend powerfully to elevate its character. And this I look upon as one of the most important results of the union of the profession. Were any member, who conducted himself in a manner to bring disgrace upon himself and his profession, to have his name erased from the list of the general body, and be denied the legal privileges granted to medical men, under the sanction of the Secretary of State, his destruction as a medical practitioner would be inevitable. How different would be the effect of erasing the name of a member from the list of any of the present corporations!

Having stated the principles upon which, as it appears to me, a sound medical reform ought to be grounded, I proceed to state briefly how the arrangement of the profession which I have suggested may be accomplished.

The first and most important part of any legislative measure for the improvement of the medical profession should be directed to secure a good and uniform education for

medical practitioners over the whole kingdom. I agree with Professor Kidd, and with, indeed, the generally-expressed desire of the profession, that there should be established in each of the capitals of the three divisions of the kingdom, *one board*, and one only, for examining and licensing all medical practitioners, and, I would add, with the power also of granting degrees. Such a board should, in my opinion, be composed of men of general science and literature as well as medical men,—so as to be capable of judging of the scientific and literary acquirements as well as the medical attainments of candidates for degrees.

In London there exists an institution already in operation, which might supply such a board. I refer to the University of London. This institution I consider, in its present state, extremely defective. The number of Fellows, thirty-five, is too numerous for an executive body, and not sufficient to admit of the formation of an effective executive council. Accordingly, the working of the University has been very difficult, and its decisions often most unsatisfactory to a large proportion of its members; and this chiefly from the want of that deliberate consideration and calm discussion, which a more limited and responsible body necessarily exercises. To render this institution efficient, the Fellows should be increased to a number sufficiently large to admit of their electing from among themselves a council, consisting of fixed proportions of the different Faculties, for conducting the ordinary affairs of the University. Were the new Fellows chosen on account of their character and reputation in the different departments of literature and science, of medicine and of law, there would be no difficulty in selecting from the whole number such an executive council as would be satisfactory to the profession, and a guarantee to the government that the interests of the public were sufficiently attended to.

Were the University of London so constituted, I can see no valid objection to its being the body for testing the candidates and granting degrees in London. The regulations respecting the amount of preliminary education, the course of medical study, and the mode of conducting examinations, adopted by the University of London, may no doubt be improved; but even as at present existing, these regulations are, I believe, equal, if not superior, to those of any other institution for granting medical degrees in this or any other country. That the University of London has not entirely fulfilled the expectations of the public, is not owing to the regulations respecting education, but to the defective structure of the institution. Let this be remedied, and the University of London will

prove a most useful institution. It has already done much to raise the education in the public seminaries throughout the kingdom, and may do much more if well organized.

Such a Board having power to examine and grant Degrees in Arts and Law, as well as in Medicine, I consider a great advantage. The education of medical men has hitherto been too exclusively medical;—an error which the University of London has laboured to correct by making the preliminary education of the candidate for Degrees in Arts, in Law, and Medicine, the same.

There would be no difficulty in establishing such an institution as the University of London in Dublin and Edinburgh. The colleges of physicians and surgeons of those cities would supply the medical members; and there is no dearth of literary and scientific men, nor of lawyers, from whom to choose the other members of such an institution. Nor is it necessary that the selection in Ireland and Scotland should be confined to the capitals. Men eminent in science and literature might be selected from all parts of the country. As Universities already exist in Edinburgh and Dublin, they might perhaps be so connected with the new body as to grant the degrees without the necessity of creating a new university.

The regulations regarding education, the mode of testing candidates, &c. would, of course, require to be the same in all the institutions.

The profession, throughout the kingdom, would be subject to the same regulations, and all the members would have to pass through one or other of the three examining boards, or universities. The education and tests of proficiency being the same for all, all would of course enjoy the same privileges of practising in any part of the British dominions.

In addition to the three examining bodies, or universities, a central board would probably be necessary for fixing and assimilating the course of education, preliminary and medical, and for making such changes in the subjects of study, and mode of examining, &c. as may become necessary in the progress of science. It is reported that the government have the intention of establishing such a body; to be composed partly of medical, and partly of non-medical men. Such a Board, if well organized, would, I believe, be of great utility in the country. It would constitute a Board of Reference to the government in all matters relating to the public health, as well as a Board for regulating medical education.

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OBSERVATIONS  
ON THE  
STATISTICS OF PHTHISIS,  
AND ON THE INFLUENCE OF CLIMATE AND  
OCCUPATION ON THE PRODUCTION AND  
DEVELOPMENT OF THAT DISEASE.

[Continued from p. 497.]

IN the preceding remarks, I have shewn, first, that in Egypt, a country which, though not remarkable for an extremely uniform temperature, yet enjoys a temperature more equable than that of most parts of Europe, phthisis is a rare disease. Secondly, that in New South Wales and the Cape of Good Hope, countries remarkably subject to rapid and great changes of temperature, a singular immunity from phthisis is enjoyed. We may gather from the two last examples compared with the first, that neither equability of temperature, nor the frequency and magnitude of the variations in temperature to which a country may be subject, have any effect, of themselves alone, in the production of phthisis. It may be premature to deduce so important a conclusion from so few examples; but many other cases might be cited, which I have neither space nor time to quote without omitting other and more important matter.

I must now direct the attention of my readers to a few examples of the truth of my original proposition, viz., that, *ceteris paribus*, phthisis is more prevalent in proportion to the greater moisture of a climate; by the term moisture understanding the quantity of aqueous vapour ordinarily present in the atmosphere, and not the number of inches of rain usually falling in a certain time, or the number of rainy days in the year.

At the time of writing the above remarks, I was unacquainted with the hourly Solstitial and Equinoxial observations of the wet-bulb thermometer

made by Sir J. F. W. Herschel during his residence at the Cape of Good Hope. The observations of this distinguished philosopher furnish us with the necessary and very accurate information as to the quantity of vapour usually present in the atmosphere. The original observations are to be found in the *Athenæum* for 1835, and the three subsequent years. I have availed myself of only four sets of observations, considering them sufficient for the purpose. In the account of the climate of the Cape, which I have above extracted from Sir J. Herschel's letter printed in the *Bibliothèque Universelle de Genève*, the difference between the indications of the thermometer with a dry and wet bulb is stated as generally, during some part of the year, from  $15^{\circ}$  to  $20^{\circ}$ : in the following series of observations the mean difference is much less, but is still considerable. The first set of observations was begun on the 20th Dec., 1835, and continued hourly; it includes forty observations, and was begun at 18h. 0m. astr. mean time. The mean temperature, as shown by the thermometer, being in this case  $68^{\circ}.0$ , and the indication of the wet bulb thermometer  $61^{\circ}.1$ . The second set of observations was made at the March equinox 1836, and continued at intervals generally of an hour for 36 hours, beginning at 17h. March 20th. The third and fourth sets were begun on the noon of June 21, 1836, and 18h. 9m. Sept. 20, 1836, and include 32 and 37 observations respectively. In the following table, the column (1) gives the date of the observations; (2) contains the number of observations made; (3) and (4) the mean temperature, marked by the dry and wet bulb thermometer respectively; (5) and (6) the maximum and minimum height of the barometer observed during the observations; and finally, in (7) the difference between the temperature marked by the two instruments.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dec. 1835	40	$68^{\circ} 0'$	$61^{\circ} 1'$	29.957	29.872	$6^{\circ} 9'$
March 1836	37	$65^{\circ} 26'$	$53^{\circ} 8'$	29.883	29.781	$11^{\circ} 46'$
June 1836	31	$53^{\circ} 7'$	$49^{\circ} 07'$	30.190	30.016	$4^{\circ} 7'$
Sept. 1836	37	$57^{\circ} 25'$	$50^{\circ} 2'$	30.215	29.920	$7^{\circ} 05'$

From the preceding observations, the dew-point may be derived by the formula given by Dr. Apjohn\*. The

mean of the four sets of observations gives for the temperature of the air  $61^{\circ} 05'$  and  $53^{\circ} 54'$  as the indications

\* This equation is the following:  $f' = f - m \frac{d p}{p}$  in which  $f'$  is the tension of steam at the

of the wet bulb thermometer. The mean height of the barometer (29.979) during these observations is so near the standard height, that the fraction  $\frac{p}{30}$  may for our purposes be taken as unity. The mean excess of the temperature of the air over that of the moist bulb is only  $7^{\circ}.51$ . The dew-point would thus be about  $47^{\circ}.6$  on the average of the year, while, the average temperature of the air being  $61^{\circ}.05$ , gives a difference of  $13.45$  degrees. The mean temperature of London being, according to three years' observations by Daniell,  $49^{\circ}.2$  and the dew-point  $44^{\circ}.8$ , giving a difference of  $4^{\circ}.8$ , it would appear that the climate of the Cape is nearly three times as dry as that of London. Such a degree of dryness, together with the high temperature of the climate, would be sufficient to account for the remarkably low rate of mortality from phthisis.

Madeira, whether on account of the peculiar and delightful climate of that island, or the high, though I fear, undeserved reputation it has long enjoyed as a desirable residence for consumptive patients, is certainly one of those localities, the statistics of the disease in which it would be especially desirable to obtain, as the examination would be a sort of *experimentum crucis* of the theory proposed in these papers.

Unfortunately, no accurate record of the deaths has, I believe, ever been published, if ever such has been kept; and there appears to be amongst those who from personal observation are best qualified to form a tolerably accurate judgment on the matter a considerable difference of opinion as to the frequency of phthisis amongst the natives of the island. It is now many years since Dr. Gourlay asserted the great frequency of phthisis among the natives of Madeira. "It is not to be concealed," he says\*, "that no malady is more

dew-point,  $f$ , its tension at the temperature of the hygrometer,  $d$ , the depression or difference between the temperature of the hygrometer and that of the air,  $p$  the existing, and 30, the mean pressure, and  $m$  a coefficient depending upon the specific heat of air and the caloric of elasticity of its included vapour, its numerical value being .01149. I give this expression for the dew point, partly because it may possibly be unknown to some of the readers of this journal, and partly because, being well aware of my own frequent inaccuracies in arithmetical computations, I am desirous to insert here, as elsewhere, every step of the process, in order that any correction may be easily supplied by the reader.

\* Observations on the Natural History, Climate, and Diseases of Madeira. London, 1811.

prevalent here than phthisis with the natives of this island. Persons of all ages, and both sexes, fall victims to it; nay, whole families have at times been swept away by it." Much more recently, Forbes has also stated, in a note to his translation of Laennec (page 325), though he does not mention on what authority, that 'consumption is very prevalent at Madeira.' Heineken\*, however, denies this, and says that the mortality from phthisis is far from great at Madeira. Two of these accounts, which differ so widely from each other, are the results of personal observation, and they shew, in a forcible manner, the little value that is to be placed on mere personal opinion on this subject, when unsupported by a sufficient number of facts not committed to memory, but carefully registered and analyzed.

Supposing that a damp atmosphere is capable of increasing the predisposition to phthisis, the mortality from phthisis at Madeira ought to be somewhat high, though inferior to the rate of mortality in Great Britain. The high reputation this island has enjoyed has certainly not been derived from any statistical investigations, but has been founded solely on some hypothetical reasons, which have never indeed received the sanction of experience, but have been rather disproved by it. The principal, and indeed it may be said, the only reason of the great preference at one time shewn by the whole medical profession in this country, and even now by some part of it, to Madeira as a residence for the consumptive, was and still is the rather higher, and much more uniform, temperature which could be there enjoyed by the invalid. It is now, however, not improbable that, in spite of these supposed advantages, phthisis is not uncommon among the natives of the island.

It will not be uninteresting to consider the meteorology of the island, and thence estimate *a priori* the comparative frequency of phthisis at Madeira and in England. On the temperature of the air, I shall quote a writer who, in an interesting paper, the reference to which is given below†, has afforded some valuable information on

\* Brewster's Edin. Phil. Journal, Vol. 10. 1829.

† Notes on the Physical Geography, Geology, and Climate of the Island of Madeira, by J. Macaulay, M.D.: Edin. New Phil. Journal, 1839, Vol. xxix.

the natural productions of the island. He states, from the examination of several meteorological registers kept with great accuracy and regularity, that the temperature in Funchal has not been "above three or four times, in many years, below 50° Fahr. The lowest we had last winter (1838) was 49°, on the morning of the 29th March, when there was snow on the mountains to within about 2800 feet above the sea. The station was, however, at a little distance from the city. The greatest monthly range during last winter was also in March, the maximum being, on the 25th March, 70°. During the summer, the thermometer is as rarely above 80°, except during a continued *l'este*, when it has been observed several degrees higher in the shade." Heineken gives, as the result of a series of observations continued for three years, a maximum temperature of 84°, the lowest temperature observed during that period being no lower than 50°.

The temperature is, then, remarkably equable; and as to the hygrometrical state of the air, we fortunately have sufficient observations. Funchal, situated in lat. 32° 38' N. and long. 16° 15' W., together with the adjoining district, contains about one-fourth of the whole population of the island, the latter amounting to about 115,000. From its position on the sea-shore, and the high and uniform temperature of the air, the town must almost of necessity have an atmosphere greatly charged with moisture. Dr. Macaulay, whom I have quoted above, says that, "judging empirically, from such effects as the rapid rusting of certain instruments, and the great difficulty of drying and preserving botanical specimens, as compared with experience in other places, I should say that, in general, the atmosphere is charged with an unusual amount of moisture. It never, indeed, appears in mist or fogs, or any other form of sensible humidity, because the temperature of the air by which it is suspended is so admirably regulated." But, on this subject, we have more accurate statements than the preceding on which to rely. Major E. Sabine made, on the 13th January, 1822, the following observations\* at Funchal, at a station about eight feet above the level of the sea:—

Barometer . . . .	30.603°
Thermometer . . . .	65°
Dew-point . . . .	54°

In the foregoing observation, to which, from the reputation of the observer, I attach much importance, there was an evaporating force of only eleven degrees, and this too during a *l'este*; a wind the dryness of which is felt as almost painful by the natives. But we learn from Heineken that the ordinary evaporating power of the atmosphere is much less than the above; for he gives as the mean temperature, and the mean dew-point, at Funchal, in the year 1826,

Thermometer . . . .	68.1
Dew-point . . . .	60.7

Or an evaporating power of only 7.4.

The climate of Madeira ought then to be more productive of phthisis than the climate of the Cape and many other countries; but still, simply on theoretical grounds, the mortality from consumption at Madeira ought to be less than that at London, the mean temperature of London, deduced from three years' observations by Mr. Daniell, being 49.2, and the dew-point 44.4.

The frequency of phthisis at Gibraltar (Lat. 36° 6' N. Long. 5° 19' W.) has for a long time attracted the attention of those interested in medical statistics, and has stood out as a marked exception to the theory generally entertained on the influence of climate on the development of phthisis. The theory which I have proposed readily supplies a solution of the hitherto unsolved problem—the frequency of consumption at the Rock.

The greatest height of the thermometer in the shade at Gibraltar, during a period of five years, was, as stated by Tulloch in the report\*, 91°; the minimum observed during that period being 50°. The temperature does not usually vary much during the twenty-four hours; but the temperature of the air at night, during summer, is generally from three to four degrees lower than the temperature in the day-time: the difference of temperature between the day and night is, however, sometimes considerably greater. The mean annual quantity of rain, taking the average of five years, is 25.60 inches,

\* Daniell, Meteorological Essays, p. 815.

\* Statistical Report on the Sickness, Mortality, and Invaliding, among the Troops in the Mediterranean, 1839.

and the number of rainy days in ten years was 686.

Taking, then, the mean annual quantity of rain, and the number of rainy days at the Rock, as the sole guide in judging of the dryness of the climate, we should be led to conclude that the atmosphere of Gibraltar is extremely dry, and, consequently, that, on my supposition, phthisis ought to be a rare disease. Neither of these cases obtain: not only is phthisis very frequent and fatal, but the climate is also extremely moist. I am not acquainted with any hygrometrical observations of any accuracy made at Gibraltar; but the following observations may give the reader an idea of the not unfrequently extremely humid state of the air at Gibraltar.

The difference, in respect to dryness, between the winds from different points of the compass, is at Gibraltar extremely well marked. Those blowing from the north are the most dry; but the wind seldom blows from the north or south, and, when it does, continues but a short time in those quarters. Westerly winds are very much more common: they are clear, dry, and refreshing; and, from the position of the town, the benefit of them is much felt: they are esteemed highly favourable to health. But the most usual quarter for the wind to blow from is the east. From the Army Medical Records we find that, from the year 1810 to 1815 inclusive, there were 1173 days on which the wind was east, 951 on which it was west, and 67 on which it was variable. Coming from the arid sands of Africa, these eastern winds are of course warm, and, when they first reach the shores of the Mediterranean, extremely dry; but as they sweep over the surface of the sea, the air rapidly absorbs moisture, and when it reaches Gibraltar is perhaps saturated with aqueous vapour.

Hennen\* remarks that "all winds from the easterly points are damp, raw, unpleasant. . . . The deposition of moisture is perfectly obvious, as it is condensed by coming into contact with the mountain, and trickles down in palpable drops." The easterly winds, or *Leranters* as they are termed, are most prevalent from July to November, which is also the most unhealthy pe-

riod of the year to the troops. All the days on which the wind was easterly are, according to Dr. Hennen, to be reckoned wet in one sense of the word, and it must be remembered that rain also fell on days in which the wind was in other quarters than the east.

As to the frequency of phthisis, Hennen says\*: "No difference of opinion can exist on the subject of pulmonary affections, which are so frequent in Gibraltar, that they have been styled 'the true endemic of the Rock.' . . . . Genuine phthisical cases are very frequent, and run rapidly to their inevitably fatal termination; but it is a very curious fact, that on the opposite coast of Barbary they are almost unknown." But the returns of the mortality among the troops will give a more exact idea of the frequency of this and other diseases. The mortality among the troops stationed at Gibraltar was 22 per 1000 annually.

The following table gives the total number of deaths, and the number of deaths from phthisis, among the troops at Gibraltar, from 1818 to 1836 inclusive —

Year.	Strength.	Admissions for all diseases.	Total number of deaths.	Admissions: phthisis.	Deaths from phthisis.
1818	2749	2158	48	12	8
1819	3144	1984	39	17	5
1820	3017	2434	32	18	7
1821	2809	2545	32	14	3
1822	2737	2489	23	22	5
1823	2729	2424	22	36	9
1824	3029	3873	55	20	6
1825	3153	3253	37	19	7
1826	3607	3843	37	13	8
1827	3200	2133	29	15	9
1828	3494	4075	448	8	2
1829	3733	3362	29	13	7
1830	3707	3667	47	23	22
1831	3480	2888	41	16	14
1832	3526	3225	47	28	21
1833	3053	2228	40	23	16
1834	3034	4545	170	12	7
1835	2988	3689	51	42	30
1836	3080	3412	64	43	29
Total.	60,269	58,227	1291	394	215

The years 1828 and 1834, in which, on inspection of the above table, it will be seen the general mortality was so

\* Medical Topography of the Mediterranean, pp. 33, 34.

\* Ibid. p. 110.



great, and the mortality from phthisis so small, were remarkable—the first for a very severe epidemic of yellow fever, and the second for the appearance and great fatality of the cholera in that year. The mortality in these two years illustrates, in a striking manner, the great influence of a high rate of mortality generally in diminishing the actual number of deaths from phthisis. In the earlier part of the period to which the above table extends, it will likewise be seen that, whilst the general mortality was not much different from that happening in the years subsequent to 1828, the rate of mortality from phthisis was lower than in the subsequent period.

It was not until the year 1828 that any great and important improvements in the drainage of the town were completed; and the returns shew that, in the five subsequent years, the general mortality was decidedly lower than before. The rate of mortality among the troops, during the whole number of years to which the report extends, was 2·2 per 100; and the deaths from diseases of the lungs ·53 per 100 of the mean force. The average annual strength of the garrison, during the nineteen years to which the table refers, was 3172, and the annual mortality from phthisis 11·3: the mean annual mortality from phthisis ·36035 per 100. Were we to take this as an accurate estimate of the mortality from phthisis at Gibraltar, we should be led to conclude that the climate of Gibraltar is at least as favourable to consumptive persons as that of England. It appears, however, that the registered number of deaths from phthisis amongst the troops at Gibraltar is, owing to the system of invaliding, much less than the actual number of real cases of phthisis, which we may presume always terminate fatally.

“The total mortality,” says Tulloch\*, “by diseases of the lungs, would appear to be less at this station than at home; but that, we apprehend, arises from many of the consumptive patients being invalided, who, if they die on their passage, or after their arrival in Britain, are not included in the returns of the station where their disease originated. That this is sufficient to account for the difference may easily be supposed

from the fact stated in the Medical Report of 1835, that during the thirteen years previous, the average number of deaths from consumption in Gibraltar was 12·3 annually, besides about five sent home labouring under the same disease, of whom few or none recovered.

In the report on the health of the troops in the United Kingdom, in which we were able to trace every consumptive case that terminated fatally, we found that, out of 286 admissions for that disease amongst the Dragoon Guards and Dragoons, 236 died; and there is good reason to believe that, had we been able to follow out all the cases sent home from Gibraltar, with the same exactness, we should have found the proportion of deaths equally high.”

Assuming, then, as I think we safely may, the ratio the number of deaths from phthisis, or, in other words, the number of phthisical cases, bears to the number of cases admitted into the hospitals under the head of phthisis, to be the same in Gibraltar as in England, the total number of deaths from phthisis would be raised from 215 to 325: this would give an annual mortality from phthisis of 17·1, and an annual mortality from the same disease of ·539 per 100 of the force. The mortality thus estimated is high, but, as will be seen, is still considerably below that among the troops (Dragoons and Dragoon Guards) in England. I confess I am sceptical as to the climate of Gibraltar not being more unfavourable to those predisposed to consumption than our last obtained estimate of the mortality from that disease would indicate; and this on account of the prevalence of epidemic diseases at the Rock, which, while they swell to a large amount the returns of the total number of deaths, by attacking those affected with other complaints, diminish the number of deaths which, under ordinary circumstances, would be registered under other heads. That this consideration is of some importance is evident when we find that, by omitting the two years 1828 and 1834, in both of which severe epidemics occurred, the annual mortality from phthisis, deduced from the remaining seventeen years, is ·5726 per 100 of the mean strength: the mortality, when deduced from the whole nineteen years, being, as we have just seen, only ·539.

The comparative mortality from con-

\* Report on the Invaliding among Troops in the Mediterranean, 1839.



sumption, and the other diseases of the lungs, was as under :—

Total admissions for all diseases of the lungs	8,487
„ Consumption	394
Total deaths from all diseases of the lungs	318
„ Consumption	215
<i>Annual ratio per 100 mean strength.</i>	
Admissions for diseases of lungs	14.1
Deaths by diseases of lungs	53

[To be continued.]

## ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.  
(For the Medical Gazette.)

ON referring to our acknowledged authorities, it is surprising to find what a discrepancy of opinion prevails regarding the origin and nature of neuralgia. Some maintain that the proximate cause is so wrapt in obscurity as to be totally undiscoverable by human ingenuity. Others, among whom is the late Dr. Parry, that it consists in a chronic inflammation and thickening of the neurilema, or vascular membranous envelope of the nerves. Other pathologists have conjectured that it owes its origin to some obscure affection of the brain, and, anon, we are told, that the brain, in the majority of cases, is perfectly unaffected, or only secondarily sympathises, and that the rapidity with which the pain shifts its seat proves also that it is not inflammatory.

The idea suggested by Dr. Parry of the cause, appears to me to be decidedly erroneous, as the thickening of the neurilema exists in comparatively few instances, and when it does exist, only in cases of long continuance, and is not the cause of the affection, but the consequence of protracted irritation of the nerve, which irritation has been communicated, by direct contiguity, to the investing sheath, thus giving rise to subsequent morbid thickening.

There are many pathologists, too, who argue for an exclusive *mechanical* origin, and have proved their theories by exhibiting spicula of bone, subcutaneous tumors, and exostoses, which have irritated the affected nerve at its trunk, or some of its fibrillæ, in the course of their ultimate ramifications. It is very true that these mechanical causes are sufficient to the production of

the disorder, and that they do produce it, in some of its severest forms; and it proves thus much (which is an admission not without its value), that the nerve has been, in some part or other of its course, irritated, and that the irritation has produced peripheral excitement. These are causes, however, which cannot clearly be assigned as the originators of "idiopathic" neuralgia.

Before I proceed further, I have a word to say regarding the idiopathic nature of neuralgia. I confess I entertain most heterodox misgivings; in truth, I do not believe, from close examination into many cases, that the idiopathic variety of authors rests upon a sure and established foundation, or that specific excitement ever manifests itself, in the peripheral expansion, as a primary affection. To suppose it, would be in direct contravention of all analogical deduction. If neuralgia be produced by mechanical lesion, we are frequently enabled to trace the injury to its source; and the evidence of our senses assures us of the origin (be it never so remote) of the local mischief. A nerve *must* be irritated, in some part or other of its course, in every case, to produce the morbid excitement. This is an axiom which has been overlooked, but which is so securely based that few, I think, will be disposed to dispute it. If a nerve pass over a necrosed surface, which I have witnessed in a recent instance, what is the effect? The jagged face of the bone bruises and irritates the nerve, and intractable persistent neuralgia (with obscure intermissions) is the result. If a tumor, subcutaneous, or deeply seated, press upon a nerve, it is stretched and braced, like the string of a violin over its bridge, and intermittent or permanent neuralgia is produced. Every practitioner knows what anomalous pains will sometimes arise from the passing of a gall-stone through the duct of the liver, and from a calculus in its transit along the ureter from the kidneys into the bladder. These are all well-marked instances of neuralgia, arising from mechanical excitement; and wherein, I would ask, does the pain differ from that which is produced in the mis-called idiopathic variety?

It appears to me that authors have wearied themselves in vain in the endeavour to establish more causes than are necessary to account for simple

neuralgia. It is not to the credit of philosophical inquiry thus to overburthen our pathology. The evils, in a practical point of view, are incalculable. If we have, in many instances, (which we certainly do possess) a well-marked cause, why may it not be efficient in all to produce identical results? I have been censured for seeking to isolate the proximate cause of neuralgia to too great an extent; and it has been said that, after more extensive experience in this inscrutable disease, I shall become more catholic in my doctrine. But, with all due deference to my accusers, I safely and confidently assert that, after considerable opportunity, and several years of patient investigation, I have become more deeply rooted than ever in the persuasion of the correctness of my former opinion. I believe neuralgia, in one form or other, to be an affection of much more frequent occurrence than is generally supposed; and, whatever may be the cause, that it is a more universal disorder now than it was formerly. I am inclined to afford it even a wider range, for I believe that many affections which we regard as specific diseases, such as rheumatism, hysteria, chronic and subacute inflammation of internal organs, and the like, are but varieties of neuralgia.

One example to bear out this assertion:—A reverend gentleman, residing in the country, consulted me a short time since, who was labouring under disordered liver. He was then, and had been for a long time previously, by direction of his medical attendant, under treatment for supposed chronic inflammation of that organ. The pain in the region of the right hypochondrium was at intervals so acute as to occasion him to loosen every article of dress which caused the slightest pressure upon the affected part: even the weight of the bed-clothes aggravated the pain materially. Upon examination, I found that firm pressure could be endured with comparative ease, and that the disorder was intermittent, and although the free intervals had latterly become more obscurely indicated, still they did occur, and were sufficiently marked to render it apparent that the disorder was not inflammatory but neuralgic; in fact, hepatalgia. He was ordered to discontinue the mercurial course which had been adopted, and

was placed upon a soothing and tonic plan of treatment, and in a very short time he was restored to health, and enabled to resume his public duties.

Any portion of the body pervaded by the gray or ganglionic nerves may be subject to neuralgia. Mason Good, in his nosological arrangement, has divided the class *Neurotica* into three species—namely, *neuralgia faciei*, *neuralgia pedis*, and *neuralgia mammæ*. This, however, is evidently circumscribing too much, as we have neuralgia of the skin, of the stomach and bowels, of all the internal glandular organs, the heart (manifest by intermissions, &c.) and, according to Laennec, even of the arteries. This latter authority supposes that *angina pectoris* is a species of neuralgia, frequently occurring without organic disease. Wherever there is mere irregularity of function, without pain, it appears, although the same cause may produce both, to be a decided misnomer to apply to it the term neuralgia.

M. Piorry has described a curious form, which he designates "*Neuralgie irienne ou ophtalmique*," where the pains commence, as he supposes, in the nerves of the iris. It attacks persons who dwell in dark apartments, those who read or write much, and artisans whose occupation requires them to fix their eyes continually on minute objects. At the commencement of the attack, the symptoms are referred to the eye: the sight is suddenly obscured or perverted; and a dark spot, surrounded by a luminous circle, frequently appears before the eye. After an interval of variable duration, generally not exceeding a few minutes, this symptom disappears, and is succeeded by stupor, lancinating pains of the eye and temple, and a sensation of pain over the organ, as if it were too full. At this stage of the attack vomiting usually occurs, and the paroxysm begins to decline\*.

With these preliminary observations I proceed to a more minute consideration of that form of neuralgia which has been denominated *tic douloureux*, and which may be regarded as a type of the whole species embraced by the class *neurotica*.

[To be continued.]

\* The reader is requested to bear this fact in mind.

## PERFORATION OF THE STOMACH.

*To the Editor of the Medical Gazette.*

SIR,

I BEG to transmit to you the accompanying case for insertion in the *MEDICAL GAZETTE*, if you should think it worth publishing.

It appears to me interesting, as presenting so much important disease of which the symptoms presented little or no indication; and I understand from Mr. Latney, of Newark, who had attended Mr. G. for some years, that he never had any symptoms which led to a suspicion of such disease.—I am, sir,

Your obedient servant,

GEORGE KENNION, M.D.

Physician to the Harrowgate  
Bath Hospital.

High Harrowgate, June 20, 1842.

CASE.—Friday, June 10th, 1842.—I was requested this evening to see Mr. T., aged forty-nine, in consultation with my friend Mr. Parry, of this place.

His appearance was somewhat emaciated, although not to any great extent; his countenance was anxious; the pulse 76, and languid; the tongue white and swelled, with a very slight yellow fur in the centre. His principal complaint was of extreme distension of the bowels, "as if he would burst." There was no tenderness on pressure in any part of the abdomen. The bowels had been relieved in the course of the day; and the motions were reported as being very black and offensive. His urine was natural in appearance and quantity; and its healthy condition was confirmed by the ordinary tests. His appetite was on the whole good; and he never suffered any pain or inconvenience after eating, beyond that arising from the flatulence. I found upon inquiry that he had been more or less out of health for some years; but without any leading or very tangible symptom, until about six months ago, when he received a violent shock in consequence of the sudden death of a near relative. Since that time he has been considerably worse: the leading symptom has been paroxysms of severe pain, generally coming on at night, and referred almost entirely to the umbilical and hypogastric regions. These were always connected with a great degree of flatulent distension; and passed off

generally with the discharge of flatus. The pain, however, was so violent, and recurred so frequently, that I believe for many months he has not known what it was to have three hours sleep at any one time.

Under these circumstances he came to Harrowgate about the first of the present month, where he has found great relief on former occasions, when out of health. He drank the sulphuretted waters at first for some days without any medical adviser; but, not receiving any benefit, he called in the assistance of Mr. Parry, who, finding the biliary secretions and the whole digestive apparatus much impaired, directed his treatment to those points, and with so much success, that Mr. P. said, for weeks he had not slept so well, or felt so comfortable, as for the first two or three nights after Mr. Parry saw him. Still, however, he did not gain strength; and it was at this time that I was called in.

The treatment which we agreed upon adopting was a continuation of the plan which had been commenced by Mr. Parry:—Small doses of blue pill; extract of colocynth and hyoscyamus, to regulate the bowels; the nitro-muriatic acid, with decoction of taraxacum, as a general tonic, and with the view of acting upon the liver, which was evidently at fault; and the use of the asafoetida lavement for the purpose of relieving the tympanitic state of the bowels. At the same time his diet was carefully regulated.

At my subsequent visit the following day, on a careful examination of the abdomen, I stated my opinion that there was fluid in the cavity; but there was so much flatulent distension that it was impossible to be quite certain as to its existence. There was no tenderness on pressure at the epigastrium, or any other part of the abdomen; and no irregularity of surface could be ascertained.

In consequence of the temporary indisposition of Mr. Parry for two or three days, the subsequent history of the case fell solely under my observation. I left Mr. T. comfortable on Saturday evening, complaining only of the distension, and of very slight tenderness at the caput cæcum coli. On Sunday morning I was called up to see him at 4 A.M., and found him with an excessively rapid pulse, which I could

not count; the greatest anxiety depicted upon his countenance, and complaining of the most agonizing pain over the whole abdomen, which was so tender as not to bear the slightest touch. All these symptoms had come on about two hours previously. He had a mustard plaster applied to the abdomen; and I ordered a dose of morphia to be taken immediately, and to be repeated if necessary. This seemed, in some degree, to relieve the extreme pain; but he became insensible about 8 o'clock A.M., and he died at 9½ A.M.

*Sectio cadaveris, twenty hours after death.*—In consequence of Mr. Parry not being able to leave his room, Mr. Milnthorpe assisted me at the examination.

On opening the abdomen, we found more than three quarts of turbid serum, in which were floating a few small flakes of lymph. The bowels were immensely distended.

On the anterior border of the lesser curvature of the stomach, we found two irregular openings of about three-quarters of an inch in diameter; the immediate margins of which were as thin as a piece of paper. These perforations were at the distance of about an inch and a half from the pylorus, and were situated in the centre of a mass of cartilaginous substance, which involved the whole circumference of the stomach for a distance of from three to four inches from the pylorus. The mucous membrane lining this diseased portion did not present any unusual appearance, excepting that in one or two small patches, and around the edge of the perforation, it was slightly turgid, and of an ashy hue. But the muscular coat seemed to have disappeared entirely, and to be replaced by what I have above described as cartilage. The thickness of this substance varied in different parts, from one-fourth of an inch to an inch; it had a nodulated appearance, and when cut into was perfectly white, homogeneous in structure, and without any bands, or striated appearance whatever. The pylorus itself was only slightly thickened; and this thickening appeared to arise entirely from an hypertrophied condition of the mucous membrane.

In some parts the serous coat of the stomach was involved in the cartilaginous degeneration, while in other

parts it was quite healthy; and attached to it in different places, by short pedicles, were a large number of small fatty tumors, varying in size from a pea to that of a large filbert; and each was contained in a fibro-serous capsule.

The right lobe of the liver was slightly enlarged, and its whole substance much congested; the gall-bladder was perfectly empty of bile, and its whole cavity almost entirely filled by an immense gall-stone. The rest of the abdominal viscera were healthy.

There was about an ounce of serum at the base of the brain, about six drachms in the ventricles, and between the arachnoid and pia mater there were a few traces of slight serous effusion.

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### ABSCESS IN LUNG POINTING BENEATH UMBILICUS.

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*To the Editor of the Medical Gazette.*

SIR,

THE following interesting and uncommon case I have transcribed from my case-book, thinking that its publication in your journal may possibly assist some practitioner or other in forming a correct diagnosis on a future occasion. I shall make no further comment, but give the bare facts as they presented themselves to my notice.

I am, sir,

Your obedient servant,

T. HERBERT BARKER.

Bedford, June 20, 1842.

Henry Danes, ætat. 34, a working jeweller, having a cachectic appearance. Has lived intemperately: drinking brandy and gin in excess. Has not enjoyed good health for the last two years, complaining of loss of appetite, sickness in the morning, and general languor. About four months ago, he first noticed a distinct, hard swelling under the short ribs on the left side; but for three or four years he has imagined that there has been slight protrusion of the lower ribs on that side, which has considerably increased since he first observed the swelling below them. The enlargement has been gradually increasing until it has attained its present magnitude and position.

At the present time (Oct. 25th, 1839) the abdomen presents an enlargement



on the left side, the circumference of which is about that of the two hands opened and joined together; it extends a little beyond the median line on the right side, the remainder of the swelling being on the left of that line, and extending from the ribs very nearly to a level with the anterior superior spinous process of the ilium. The integuments covering the enlargement appear to be thinner towards its upper and right side, as though it were about to point at that spot. Its circumference is considerably harder and firmer than its centre. Fluctuation is distinct in every part of the tumefaction. He declares that the origin of it was from beneath the ribs on the left side. He complains of pain in the back and loins, particularly during the night, and of a heavy dragging pain between the shoulders. He has no pain in the right shoulder particularly. He has frequent and acute pain along the left arm to the fingers, also in the region of the heart, frequently attacking him suddenly, with palpitation of that organ. The tongue is furred; the pulse weak, and 75; the bowels are generally relaxed, but the evacuations of a healthy appearance; the appetite is indifferent, and thirst considerable. The urine is scanty and thick, of a dirty-clay colour, producing much pain in its passage from the bladder. He has had a slight cough and expectoration in the morning lately, and has occasionally perspired profusely in the night. No chilliness or shivering; no pain in the chest; no evening exacerbations of fever; and no throbbing in the abdominal enlargement. He has never had the ague.

On examining the chest with the stethoscope, the respiratory murmur is found to be puerile on the right side, and almost imperceptible on the left. Percussion produces very different sounds on the two sides, being much duller on the left than on the right side. The impulse of the heart is rather stronger, and diffused over a wider space than natural, but there is no morbid sound.

On subjecting the urine to heat and to nitric acid, it was found to be highly albuminous. Ordered—

A generous diet, tonic and diuretic medicines, with gentle iodine friction over the abdominal swelling.

After having treated this case for a

few days, my patient was removed to the Infirmary, under the care of a physician, by whom it was named a case of *splenitis*; and the following is a short summary of the case from this period:—

Some weeks after his admission the abscess pointed a short distance below the umbilicus, and discharged its contents—some two pints of healthy looking pus; and the discharge continued in profuse quantities to his death. Hectic symptoms set in, and colligative perspiration and diarrhoea preceded death, which took place in the beginning of March 1840. During the progress of the disease there were no other indications of thoracic disease than have been alluded to.

Owing to the kindness of the physician under whose care this poor man was placed, I was present at the post-mortem examination. The body was extremely emaciated. Our attention was first directed to the apparent seat of the disease—the abdomen; and on dividing its parietes, the muscles were observed to be split up, as it were, by a quantity of matter which was found to have no connection with the abdominal cavity. On more minutely examining this diffused abscess, it was ascertained to exist between the external and internal oblique muscles of the abdomen; to communicate below with the opening through which the matter had made its exit, and above, with a small opening which was traced through the muscles of the ninth intercostal space on the left side, through the firmly adherent pleuræ costalis and pulmonalis to the interior of the lung on that side, which presented a cavity probably capable of containing four ounces of pus.

The liver, spleen, and bowels, were healthy; the kidneys presented a fine specimen of the granular disease so fully described and beautifully illustrated by Dr. Bright. The right lung was tubercular in the upper part, and the air-cells and tubes on that side were enlarged. The left lung was exceedingly diminutive, and its entire structure around the large cavity communicating with the abdominal parietes, studded with tubercles in every stage of development.

The heart was healthy.



## VARIOLA AND VACCINIA.

*To the Editor of the Medical Gazette.*

SIR,

SHOULD you consider the following cases, which came under my observation in 1839, during the prevalence of small-pox in the town in which I was then residing, and which I have been induced to send you from seeing Mr. Curling's paper in your number for last week, worthy a place in your valuable journal, you will oblige me by inserting them.—I am, sir,

Your obedient servant,

ALFRED MARKWICH.

North Brixton, June 19, 1842.

C. H., aged 10 years, was attacked with small-pox May 11. Had never had cow-pox. This induced the parents to have the other children vaccinated—two girls, one 5, the other 7 years, and a boy aged two years: this was accordingly done on the following day. The virus produced effect only on the boy. As the small-pox was raging much in the town, the mother was induced by some of her friends to inoculate them with small-pox matter taken from the sister's arm. She did so May 17th, the fifth day after vaccination. The vaccine pustule was at this time distinctly visible on the younger brother's arm. The child was very fretful and drowsy during the whole period of incubation; the pustule increased daily in size.

On the 23d, the sixth day after inoculation, the small-pox eruption made its appearance in small red spots, similar to flea-bites.

24th.—Eruption more full and elevated, though not so much so as that on the two sisters, in whom vaccinia was not produced, and the elder brother, who had it some years previously. His face was not so red, or the pain in back and head so severe. He was more lively, and had no sickness, of which the sisters complained much. Bowels open; tongue coated.

26th.—Pustules remarkably distinct, about twenty in number on the face, and but few on the other parts of the body. Bowels open; pulse quick; tongue still furred. The pustules are much more abundant than on the other children.

28th.—Small-pox pustule is covered with a brown scab; that of the cow-pox has still increased in size. The eruption has a much better appearance than on the other children, in whom it is remarkably confluent on the face; especially the elder brother, whose eyelids are so much tumefied as to completely close the eyes.

29th.—Eruption on younger brother on the decline; at its height on the others.

31st.—Eruption on younger brother scarcely visible; vaccine pustule very hard and brown; eruption on the others declining.

During the time of incubation and through the whole of the eruptive stage, the children took some simple saline mixture, of magnes. sulph., potass. nitras, antim. potass. tart., in doses proportioned to their respective ages. Quassia infusion was given when the eruption declined, and they all gradually recovered.

REMARKS.—The contrast between these four cases (the two sisters who had not had cow-pox, the eldest brother who had it some years previous, and the younger brother who had it together with small-pox) is particularly interesting. They, I think, in a great measure, tend to prove the power of cow-pox in mitigating the severity of small-pox, so long as the system remains under its influence; and also, that it will lose much of its efficacy by the change time produces on the system.

*To the Editor of the Medical Gazette.*

SIR,

THE case of natural small-pox occurring immediately after vaccination, so ably described by Mr. H. Curling in the last number of your journal, is, I think, one of much interest: in the first place, as proving the remarkable power which the cow-pox possesses in modifying the small-pox, if present in the system at the time of its introduction; and secondly, in disproving the identity of the diseases.

With your permission, I will describe two cases of a similar nature that have lately occurred in my practice, which, together with Mr. Curling's, and others that have fallen under my observation, render it difficult to me to consider the

diseases identical, ably as that opinion is supported by Mr. Ceeley.

On the 14th of Jan. 1842, I vaccinated Thomas Sinfield, æt. 5 years, and Jane Sinfield, æt. 2 years, the eldest suffering at the time from the premonitory symptoms of small-pox, to which disease both of the children had been exposed for several days previously, having slept with a brother who was suffering from confluent small-pox in its most severe form, being literally one mass of pustules from head to foot. The youngest child was also unwell at the time of the operation.

Notwithstanding in both cases the inoculation was successful, the disease proceeded regularly through its stages; the vesicles were fully and perfectly formed. Immediately, however, that the vesicles began to decline, the distinct eruption of small-pox appeared in both children, attended with so little constitutional disturbance as hardly to require any medical treatment, and no confinement to bed. The eruption of small-pox did not pustulate, but about the 7th or 8th day dried into scabs. I should observe, that for four days after inoculation the children were exposed to the contagion of small-pox, living and sleeping with the lad who was afflicted with it, whose body, also, was allowed to remain in the room two days after death.

Contrary to the usual opinion, my observation would lead me to believe that vaccination, performed during the incubative stage of small-pox, is *generally* successful. I should be glad if those of your readers who have opportunities of informing themselves on this head would communicate the results of their experience.—I am, sir,

Your obedient servant,  
J. B. METCALFE, M.R.C.S.

Hackney, June 22d, 1842.

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#### ON THE OCCASIONAL TENDENCY OF IODINE TO PRODUCE INFLAMMA- TION OF THE JOINTS.

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*To the Editor of the Medical Gazette.*

SIR,

Will you have the goodness to record the following fact respecting the use of iodine.—I am, sir,

Your obedient servant,  
J. M. WINN, M.D.

Truro, June 2, 1842.

About nine years since the late Dr. Balmanno, of Glasgow, called my attention to a patient of his who had taken iodine under his direction, and whose finger-joints had become swollen during the use of the medicine. Dr. B., at the time, conjectured whether the tumefaction might not have been occasioned by the iodine. As the case was a solitary instance, several gentlemen, who were present, as well as myself felt sceptical as to the fact. I had quite forgotten this circumstance until very lately, when it was recalled to my memory by a somewhat similar case occurring in a young gentleman of Truro, which I saw in consultation with Mr. Jervis of this town. The patient I alluded to was about 20 years of age, and had suffered from hæmoptysis and an indolent superficial inflammation of the fauces; for the latter symptom we repeatedly prescribed, with the best effect, two grains of potas. iodid. three times a day; and the peculiarity of the case was, that as the throat improved in appearance the wrist joint became inflamed and swollen, and on leaving off the iodine the joint speedily recovered its natural state. As this effect occurred every time the iodine was administered, I was led to suspect it was caused by the medicine, and on mentioning my suspicion to Mr. Jervis, he thought he could confirm my opinion by a case of enlarged spleen which he had lately treated successfully by potas. iodid., and in which the joints became swollen on the subsidence of the swelling of the spleen.

From these cases we may conclude that iodine has an occasionally tendency to produce inflammation of the joints, and that, when it does produce this effect, it is a sign that the medicine is acting beneficially and effectually on the system. I may incidentally notice that, in the case of the young gentleman alluded to above, the iodine invariably produced, in addition to the inflammation of the joints, an eruption of pustules in different parts of the body; this latter symptom, and also coryza, I have noticed as very common effects of potas. iodid. I would further observe, that the influence which potas. iodid. exerts on the structure of the joints, may be adduced as an additional argument to prove that mercury and iodine have similar effects on the animal economy. Iodine, like mercury, is an

effectual remedy for rheumatism, and, like it, we perceive it has also the property of producing a rheumatic sort of inflammation of the tendinous and ligamentous structures.

P.S.—Since writing the above I have met with another case, shewing the influence of iodine on the joints. The patient, Mrs. L., of Tywardreath, had been taking potas. iodid. for about a fortnight, under the direction of Mr. Vaudrez, of St. Austell, for an affection of the head, when she complained, with some feelings of alarm, that her finger-joints were swelling. On shewing them to me, I attributed the thickening to the action of the medicine. The truth of my opinion was verified by the speedy reduction of the swelling on intermitting the iodine.

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## MEDICAL GAZETTE.

Friday, July 1, 1842.

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*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*

CICERO.

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### ON MEDICAL REFORM.

THE subject of medical reform is one peculiarly beset with difficulties; the various questions which arise are perplexing, and the objections to every new plan hitherto proposed are so numerous, that it is no easy matter to arrive at a correct conclusion as to which course may be adopted most advantageously for the several branches of the profession as well as for the public. Each party has some objects in view, which cannot be attained without entrenching upon the interests of another. It is therefore impossible to please all; and we foresee that, whatever measure is carried, there must necessarily be many discontented with it. We make these remarks, inasmuch as we have good reason for knowing that the legislators who have undertaken the management of the subject find it far

from easy to form any general plan, which shall fulfil the most important requisites; and have no less trouble in accommodating the several details, so as to suit the wants and wishes of the various classes of the profession. They have the difficult task to perform of remodelling the whole, without materially inconveniencing any particular branch.

In this dilemma our thanks are due to Sir James Clark, for the suggestions which he volunteers on the subject, and which, containing as they do "the unbiassed opinions of one who has for many years directed his attention to the state of the profession, and the means of improving medical education in this country," deserve attentive consideration. His remarks on medical reform, contained in a letter to Sir James Graham (extracts from which will be found in the preceding portion of the present number), are evidently the result of a careful consideration of the subject, and are written in a moderate and impartial tone. Though we must be permitted to differ from him on many points, we are no less indebted to him for the trouble he has taken, or less sensible of the desire he shows to contribute to the welfare of medical practitioners. We propose to offer a few comments on some of the more important contents of his letter.

One of the great objects to be had in view in effecting any change, is the welfare of general practitioners, and, as Sir James justly observes, no scheme of medical reform which does not especially provide for them can be satisfactory. He appears, however, to think that, on the present occasion, the members of the medical corporations are consulted, while the claims and feelings of the great body of the profession are likely to be lost sight of. Now the fact is, that, though the general practitioners are undoubtedly the persons

most interested in the present changes, and claim the first attention, it is almost impossible to make any direct appeal to them as a body, in such manner at least as to lead to any satisfactory result. The medical associations, it is true, are organs through which, in some degree, their opinions may be made known; and the suggestions of these bodies have been taken into consideration. But they embrace proportionally too small a number of the practitioners of the country to give weight to their sentiments, especially when we consider that they represent only the opinions of a certain portion of the members. Besides, the petitions presented and the proposals made by these bodies are so various and contradictory, as to neutralize one another. Scarce any two agree, except in the one point—that reform is necessary. They are examples of the adage, “*Quot homines, tot sententiæ.*” The only resource left, therefore, is in the councils of the corporate bodies, who must be considered, in some measure at least, as representatives of the whole profession, and who, having hitherto had the direction of affairs, and consequently been in the habit of considering medical politics, must be supposed to be more fully acquainted with the existing deficiencies, and better able to propose the means of supplying them, than those whose opportunities of observation are more limited. We may further venture to hope that, comprising as they do the most eminent men in the profession, they may be trusted with this influence, and that they will endeavour to exert it so as to improve and benefit the profession at large.

One important feature in the present letter is, the proposal to throw down the wall of separation between the Colleges of Physicians and Surgeons, and unite them into one College of Medicine, which is to have the control

over medical affairs. To the one-faculty system in general we have so often tendered our objections, that it is needless to repeat them here. We must, however, confess that it is presented to us by Sir James in the most favourable manner; and the plan which he advocates is the best which has been brought forward to effect such an object, if desirable—which, in our humble opinion, it is not. The union of the two Colleges is a far more appropriate and moderate measure than the wilder scheme of abolishing them *in toto*, and on their ashes constructing some fanciful fabric, which is to fulfil every requisite.

We consider the separate existence of these Colleges as tending materially to give stability to the profession, and especially to its great divisions into medicine and surgery—an arrangement not artificial and unnecessary, as is often said, but one which has arisen spontaneously out of the real necessities of the case, and which is essential to the progress of the science as well as beneficial to the public. By the union of the representative Colleges of these departments in medicine, the confusion in practice would be increased, without a corresponding advantage being obtained. For we cannot by any means see that such benefits would result from this amalgamation as the author of the letter predicts.

The Colleges of Physicians and Surgeons are unquestionably, in their existing construction, defective, and quite inadequate to regulate and protect the profession; and the consciousness of this has induced the members of their respective councils to set about reform. It is, therefore, hardly fair to judge of their future operation under an improved system, by their present effects under one avowedly defective. Hitherto they have been too exclusive in their internal operation, and ill sup-

ported by the laws in what regards the public. Relying on this, ill educated persons fearlessly venture to assume the rights of authorized practitioners: the prosecution of such persons is rarely attempted, or if it be, frequently terminates only in a triumph to themselves, which, of course, encourages others to follow the same system, to elude the course of education and examination required for a diploma, and practise without it, to the no small annoyance of the practitioner, who, having taken the trouble to attach himself to an institution, finds that he is unprotected by it. And the inability on the part of the Colleges to assist him, has been interpreted into an unwillingness to attempt it. But give them a different charter, make their council more responsible to their members, enable them, under certain restrictions, to recal diplomas for irregular conduct; give them, in short, a more efficient code of laws, and we believe they will be found to meet the principal demands made on them. Till they possess powers, they cannot be blamed for not executing them; but, give them the means to protect their members, and guard the interests of the profession, and we doubt not they will be found to do so as effectually as any other body that could be created.

One of the main arguments employed to show the necessity of a union of the Colleges is, that "one small section of the profession are classed under a College of Physicians, and another under a College of Surgeons, while the great body of the profession is left without any bond of union, or any connection with, or interest in, those institutions." As the general practitioners form the most important body in the profession, and are most in need of assistance, any reform which does not benefit them, would be worse than useless. To construct, therefore, the Col-

leges so as to include the small sections of pure physicians and surgeons, leaving the others unprovided for, would be a gross defect. But such is by no means the intention of those engaged in legislating on the subject. The plan proposed, so far as we understand it, is, to render the new arrangements beneficial to all parties. The Society of Apothecaries being removed, their powers, confirmed and strengthened, are to be vested in the College of Physicians, with which body, instead of the present worshipful company, the general practitioner will hereafter be connected.

With regard to the education of practitioners; the "cardinal point," which is esteemed of such high importance in medical reform, does not appear to us so highly essential as Sir James Clark appears to think it. It resolves itself into two examinations, the one, conferring the degree of Bachelor of Medicine, intended to qualify for the duties of the general practitioner, to give a licence to practise in all branches indiscriminately, and to be a preliminary step to that of Doctor in Medicine; the graduates in the latter being distinguished simply by their higher rank, and by being admitted into the body of fellows, and allowed to hold the various offices of the one-faculty college. This second examination is not to enable the candidate to practise in any particular department, but merely to make a different section, to exalt one party over another, and to distinguish a superior from an inferior class of general practitioners; at the same time persons are to be allowed to practise as pure surgeons and physicians without there being any guarantee for their especial proficiency in those departments.

We quite agree in the opinion expressed with regard to the Apothecaries' Company. We have long looked for some improvement in it. That body has doubt-



less accomplished much—more than, with its defective constitution, could have been expected of it. But, since the period in which it was instituted, medical science has undergone such changes, as to render its further continuance unnecessary.

The letter is concluded with some good observations on the importance of medical reform as a matter of state polity. Men are too apt to consider that, in providing for the welfare of medicine, they are legislating only for a small body, forgetting that the public also are deeply concerned in the matter. The interest of the two are so interwoven, that a measure, to be beneficial to the one, must regard also the advantage of the other. Medical reform is, indeed, "an important part of our domestic polity, and well deserving the attentive consideration of the legislature."

Any further discussion of the points brought forward by Sir James appears unnecessary, as it is the intention of the author, in this letter, rather to give a general sketch of the kind and amount of reform required, than to enter into the minor details of it, and though we have found it necessary to differ from him on various points, we most willingly acknowledge the candid manner in which he has treated the subject.

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE annual meeting of this Institution was held at Manchester last week.

##### *Medical section.*

*President.*—Dr. Holme.

*Vice-Presidents.*—Dr. Bardsley, Dr. C. J. B. Williams.

*Secretary.*—Dr. Sargent.

Papers on the following subjects were read on three different days. At present, we can only give the titles, but shall take another opportunity of giving a more extended notice.

Case of ascites with aneurism of thoracic aorta.

On the construction and application of instruments used in auscultation.

On the influence of the coronary circulation on the heart's action.

On a general law of vital periodicity.

On the influence of the factory system in the development of phthisis.

On some peculiarities in the circulation of the liver.

A case of an individual born deaf, dumb, and blind.

On the period of puberty in negro women.

On the mode of ventilation adopted in Glasgow.

On statistics with reference to the number of births and deaths.

#### EXAMINATION FOR A DEGREE IN MEDICINE IN THE UNIVERSITY OF ST. ANDREW'S.

*To the Editor of the Medical Gazette.*

SIR,

IMAGINING it may be useful and interesting to some of the readers of your journal to learn the nature of the examination for the degree of medical doctor at the University of St. Andrews's, I beg to forward you the one I underwent on the 3d of May last.

It consisted of six parts or examinations, conducted by the professor on each subject. The first part was upon a portion of Gregory by the professor of humanity. I was told to read it, and then translate it. After doing this I was taken into another room, in which the professors of chemistry and materia medica examined; when this was completed I was requested to retire, and in less than a quarter of an hour the last part was commenced, conducted by the professors of practice of medicine, surgery, and anatomy, and physiology. The whole examination lasted about two hours, and was carried on before the senate of the University.

I remain, sir,

Your obedient servant,

A SURGEON.

Cheltenham, June 15, 1832.

*Professor Gillespie.*—A short extract from Gregory's *Conspectus Medicinæ Theoreticæ*.

*Anatomy, by Dr. John Reid.*—What are the muscles that form the anterior wall of the abdomen? Give me the origins and insertions of each separately? What are the blood-vessels that supply them? What joins the sheath of the rectus? The fascia trans-

versalis, between what parts is it situated? What part is the thickest? With what does it join? Where is the heart situated? How many cavities has it? What vessels lead out of it? Give me the names of them. What are the valves of the heart? What are the arteries that supply the heart? What are the sounds of the heart? By what is the first sound produced? By what is the second produced? What is the rhythm? What is the covering of the heart? The anatomy of the trachea and the bronchial tubes? What becomes of the pelvic fascia? The membranes of the brain? The anatomy of the base of the brain? The course of the ventricles of the brain? What are the ligaments of the bladder? What are the coats of the bladder? The boundaries of the trigon? What are the nerves and arteries of the bladder? What are the situations of the kidneys? On what parts are they situated? Give me the muscles inserted into the digital fossa of the femur? Give me the branches and relations of the external and internal femoral artery? Give me the origin of the adductors of the thigh?

*Surgery, by Dr. Robertson.*—Give me the primary stage of morbus coxarius? Its course and terminations? What age does it generally commence in? If it goes on to suppuration, what is the most favourable termination? How would you favour it? Does anchylosis generally take place after the middle period of life? What is the diagnosis between morbus coxarius and white swelling of the knee-joint? The pathology and treatment of white swelling? The dislocations of the hip-joint? The dislocations of the ankle-joint? Where does fracture of the fibula generally take place? The causes of retention of urine? The treatment of retention of urine in old subjects?

*Practice of Medicine, Dr. Hannay.*—Pneumonia, stethoscopic signs in all its stages? How would you treat pneumonia in its different stages? What is percussion? Bronchitis, give me the stethoscopic signs and treatment. Pleurisy, stethoscopic signs? Pneumo-thorax, stethoscopic signs? What are the diseased sounds of the heart? Hydrothorax, stethoscopic signs and treatment?

*Materia Medica, Professor Skarr.*—Preparation of morphia? What are the tests for morphia? What are the tests for antimony? What are the antidotes for antimony? Preparation of bichloride of mercury? What are the tests for bichloride of mercury? Preparation of hydrarg. chlorid. In what doses would you give tinctura colchici, and in what diseases? Preparations of lead, their tests and antidotes. How would you prepare quina? What is its medicinal use?

In what doses would you give it in ague? In what doses would you give it for a tonic? *Chemistry, Professor Connell.*—Preparation of hydrochloric acid? Composition of air? Of water? What are the earths? Preparation of hydrocyanic acid? Preparation of hydriodic, iodic, and nitric acids? What antidote would you give in poisoning with oxalic acid? What dose would kill? Does it kill quickly?

## ATTENDANCE ON THE POOR.

*To the Editor of the Medical Gazette.*

SIR,

You will be conferring a favour on the members of the Colchester Medical Society, and on the profession at large, if you will give the following resolutions a place in your weekly journal, with any remarks you may choose to subjoin.—I am, sir,

Your obedient servant,

T. TOMKIN, *Hon. Sec.*

Witham, Essex.

At a meeting of the Colchester Medical Society, held at Colchester, in Essex, on the 21st of June, 1842, — it was resolved: That the thanks of this society be given to those medical practitioners, who have so nobly withstood the degrading and oppressive terms proposed to them by the Guardians of the Tending Union for attendance on their poor, and that they may be fully assured of the sympathy of this society with them, in their decision as to the refusal of those terms. And that this society expresses their regret that any qualified practitioner should be found willing to undertake those duties on such terms.

That these resolutions be published in the MEDICAL GAZETTE, County Newspapers, &c.—Signed

B. T. SYMONDS, *Chairman.*

P. S. I have enclosed a copy of the proposed terms just to shew how these liberal guardians would thumbscrew us, if they could. They are not satisfied with making their own terms for our attendance on the *paupers*, but they wish to regulate our charges for their servants and the independent poor, as they are pleased to style them. Their charity will soon be extended to the agriculturists, poorer clergy, &c.

*Intended self-supporting medical and surgical club, for the comfort and benefit of the labouring class.*

RULES :—1. Any person (married) for himself, wife, and children, under 12 years of age, paying a subscription of four shillings

and six pence in advance for 12 months, or thirteen pence for thirteen weeks, or one penny weekly, will be properly attended in all diseases and accidents, such cases only excepted, as are provided for by the poor-law commissioners' medical order of the 12th of March last, under the head, "Rules of payment in surgical and medical cases," and they will be supplied with all surgical requisites and proper restoratives.

2. Any single person, paying half the above mentioned sum in advance, will be entitled to and receive the same attendance, —three shillings in advance.

3. Any hired servant paying for twelve months, or as above stated in the first clause, will be entitled to, and receive similar benefit.

4. Bleeding and extracting teeth for persons who have been members of the club for one quarter of a year, or paid their subscription in advance, 6d. each.

5. Any person becoming a member of this club will not have the trouble of procuring a note from the overseer or relieving officers of his parish, but will have immediate attendance when required.

## GENERATION OF THE ENTOZOA.

*To the Editor of the Medical Gazette.*

SIR,

DR. WATSON, of King's College, London, in his 73d Lecture on the Principles and Practice of Physic, reported in the *MEDICAL GAZETTE* of the 6th ult., when speaking of the entozoa, says that Mr. Abernethy once told him the following curious story:—"A shepherd had to drive a flock of healthy sheep to a distant part of the country. The journey occupied two or three days. On the road one of the animals broke its leg, and was carried the rest of the way on horseback. All the flock, except the hurt individual, was turned for one night into a marshy pasture. The broken limb was set, and the patient got well; and was the only one of the whole flock that did not subsequently become affected with rot: the only one that escaped having flukes in its liver. Is it not presumable," he adds, "that the ova of these parasites were swallowed with the herbage cropped by the sheep in the damp meadow? The germs of the entozoa which dwell in closed chambers, and within the solid viscera of the body, are probably carried thither by the blood."

If the professor, or any of your readers who may be fond of such matters, more especially as they affect the subject of equivoal generation, will look into Blacklock's *Treatise on Sheep*, they will find this notion of the germs of the entozoa getting into the

solid viscera through the blood ably discussed, and satisfactorily refuted.

I am, sir,

Your obedient servant,

A PHYSIOLOGIST.

Liverpool, June 22, 1842.

## COPLAND'S MEDICAL DICTIONARY.

*To the Editor of the Medical Gazette.*

SIR,

MANY complaints have appeared in your own and in other medical journals, regarding Dr. Copland's chronic publication; but it appears to me that the greatest cause of vexation has been entirely overlooked by the discontented subscribers, in their zeal to find fault. I am myself a subscriber to the work in question, and have felt the annoyance arising from the method of its publication equally with the irritable scribes who have already lodged their complaints. I am not so unreasonable, however, as to expect that a work of such extensive and laborious research could be completed as readily, and with as much ease by a single individual, as my fellow-sufferers both imagine and desire; but I think that the learned author should have arranged the parts that have been issued, so that each volume could be bound as soon as it appeared. According to the present arrangement, it will be impossible to bind any of the volumes until the work is completed, whenever that object (and I fear it is a distant one) shall be accomplished. It has taken ten years to write what may be called the first part of the work; it is reasonable, therefore, to suppose, that the same period of time will be required for the performance of the remaining half. It is obvious, then, that the work will not be fit to bind after the wear and tear of twenty years, and the subscribers who may outlive its completion will be obliged to buy a second copy. Indeed, in nine cases out of ten at this present date, the "parts already in the hands of subscribers are so soiled and worn as to prevent the possibility of their being bound, even if the work was to be finished before the end of the year. Now, sir, as there are many uncharitable people who say this was done designedly, in order to procure a *double sale* for the work, it behoves the author to remedy the evil as far as now lies in his power, and issue the future numbers in such a form that the volumes already published may be bound before the day of judgment. The Cyclopædias are published in the manner I allude to, so that each volume is bound as it appears; and this is the only advantage which one of these publications, labouring apparently under the same

chronic malady, has over the Dictionary ; but it is sufficient to satisfy the malcontents, and why will not Dr. Copland take the hint, and do so likewise ?—I am, sir,

Your obedient servant,

A SUBSCRIBER OF 1832 TO THE DICTIONARY OF PRACTICAL MEDICINE.

June 18, 1842.

### PECULIAR FORM OF MENORRHAGIA.

Of that variety of menorrhagia connected with malposition of the uterus, and adhesion of its cervix and os tincæ to the corresponding portions of the vagina, we have also met with and treated a case, which shall next be reported somewhat in detail, as most likely to furnish its true history. Without reverting to the early history of the lady's previous health, which was good, it may be stated, that the menorrhagial attacks followed her last labour, which was an abortion, and it was attended with many untoward circumstances. The hæmorrhage, however, from a thorough history of the case, was not, we should suppose, more profuse than usually attends such accidents. The abortion was the consequence of alarm, and was, from unaccountable oversight, succeeded by retention of the secundines and utero-vaginal inflammation, and feverish consequences. The inflammation and fever, from what we learnt of the case, assumed intense and alarming characters, and continued some two or three weeks before it was known that the placenta had not been expelled. It was the discharge of an exceedingly putrid mass from the vagina at this period, which first excited suspicion that the placenta had been retained thus long, and upon examining the matters discharged, it was ascertained that the placenta formed a portion of them. To the presence of these substances in the uterus and vagina was ascribed, and doubtless correctly, the distressing symptoms which followed the abortion. During the period of inflammation, fever, &c. the lady suffered most intensely from utero-vaginal heat ; and from the statement made to us by the lady some months after, the discharges from the vagina, which preceded the expulsion of the putrid placenta, must have been unusually foetid and acrid. Very soon after the offensive vaginal discharges commenced, it was to be observed that the mucous lining of the vagina was denuded of its epithelium, and was exceedingly tender ; this condition of the vagina continued until the discharge of the putrid placenta took place, and for some weeks after. From some cause not fully explained, the lady confined herself exclusively on the left side in bed, with the lower extremities some-

what drawn up, during her long suffering ; and when she had so far recovered her strength as to be able to sit up, she was unable to place the trunk in an erect posture, either sitting or standing, but was incorrigibly inclined a little to the left and forward, and continued to assume this attitude invariably after the strength had so far returned as to enable her to walk, and even until after her case passed under our treatment.

As soon as the general health had so far recovered as to enable the uterus to resume its functional exercises, it was alarmingly manifest that the catamenial flux very speedily became menorrhagial in its character. The first menstrual period after the abortion and its terrible consequences, although decidedly menorrhagial in the character of the flux by which it was distinguished, passed by with less injury to the lady than might have been expected ; nevertheless she was much enfeebled from the loss of blood. After this attack of menorrhagia, each succeeding menstrual period was marked by similar returns of it, only that the discharges increased in quantity, and assumed more and more the characters of uterine hæmorrhage. The periods, too, were always preceded by more or less acceleration and force of the pulse, flushing of the cheeks, headache, pain of the loins, hips, and groins, more especially the left ; torpor and uneasiness of the bowels, sick stomach, and a peculiar uneasiness of the uterus compounded of pain and "drawing," and inability to sit or stand erect. These symptoms, as is usual with menorrhagia, abated in a great measure with the flow, and soon entirely subsided. The attacks continued for a week, and were always followed by fluor albus in distressing degrees.

After many months of suffering and anxiety, and with a constitution which had been originally good, but now nearly wrecked, the lady with great difficulty repaired to our neighbourhood to obtain our advice, after travelling nearly a hundred miles over rough roads, and during an inclement season. She was upon the verge of an attack, and we of course lost no time in examining into the case. Our first impression, before the examination per vaginam, was, that polypus uteri existed. This view was soon disproved, and to our utter astonishment it was clearly and fully established by the examination, that the uterus was displaced downwards, backwards, and to the left, and firmly secured in these situations by firm adhesions with the vagina. The inferior of these abnormal connections was of the form of the frenum linguae, one way fully an inch in length, and three quarters in width, drawing the cervix uteri downwards and backwards more than two inches. The adhesions of the left side were more extensive ; they occupied the whole of the left cervix

and os tincæ, drawing and fixing the uterus in that direction more than fifteen lines, and were firm and strong; and the mouth of the womb was rendered permanently dilated by them. Much pain and tenderness were experienced during the examination, in attempts to pass the finger between the vagina and cervix, especially at the terminations, of the adhesions. The frenum or inferior adhesion was excessively tender when pressed upon by the finger, and produced, if long pressure was made, sickness of stomach. During the examination it could be plainly perceived that the adhesions were put upon the stretch when the lower extremities were extended, and the body rendered more straight, and such attempts always produced pain and sickness of stomach. The lady now informed us that she had not been able to stand erect since the abortion, and that when she walked, the person was inclined forward and to the left side invariably, and that all attempts to change her attitude produced pain, and sickness of stomach. Believing the malposition and adhesions of the uterus exerted considerable influence upon its actions, as it was more or less irritated continually by them, we felt little difficulty in accounting for the menorrhagial characters imparted to the flow at each return of the menstrual efforts, by referring them to increased irritation at those periods in consequence of the natural periodic exaltation of all the vitalities of the uterus, before and during menstruation, especially that connected with sentient life. There is little doubt but the augmented bulk of the uterus at the approach of menstruation, placed the organ more fully under the constraint and irritation of the adhesions, and that the augmented irritation thus produced, operating upon the circulatory organs, transformed the catamenial secretion into hæmorrhage. That the adhesions exerted decided influence in the relation of cause and effect, in the recurrence of the menorrhagial attacks, is most conclusively established by the fact, that there never has been a return of hæmorrhage since the adhesions were removed.

In correcting or removing the adhesions, some difficulty was experienced, as might naturally have been expected. We succeeded, however, without subjecting the lady to very intense suffering, in dissecting through the adhesions, using the three-bladed speculum vaginæ of Weiss to bring the parts into view and a delicate scalpel, supported by a long handle, to divide them. To prevent reunion by adhesion, the cut surfaces were kept apart, by interposing between them lint and soft old linen. As soon as the operation was completed, and the traumatic bleeding ceased, which was very slight, we were gratified to find that the lady could stand perfectly erect, and without pain or uneasiness; and she could also flex the body to the

opposite side, which she had not been able to do before since the confinement from the abortion. The incisions were kept freely open by passing the ends of the finger through them several times daily until they healed over, which was accomplished in about ten days.

To correct the torpid state of the bowels, we employed a pill composed of aloes, jalap, and scammony, taken nightly, or as often as might be needed, with occasional portions of a mixture of aloes and subcarb. soda, after meals, to prevent acidity. To relieve the spinal uneasiness, as well as to counteract the introverting tendencies of the circulation upon the uterus, wet and dry cupping were used to the loins, hips, and sacrum. We employed astringent injections of sulph. alum. and sacc. saturn. per vaginam, to relieve the leucorrhœal state; and finally, after using the nitro-muriatic mixture with a view of improving the appetite, and stimulating the liver to a more healthy action, we had the satisfaction to see our patient restored to very comfortable health again, which she continues to enjoy now, nearly three years since the case was treated by us.

This was an exceedingly interesting case from its commencement, but especially so after it passed into our hands, as it then enabled us to discover a new cause of menorrhagia, and at the same time indicated and required a peculiar and entirely novel mode of treating this affection. It also points out the necessity of per vaginam examination, as a diagnostic means in certain cases of menorrhagia which have resisted the ordinary modes of treatment.—*American Journal of the Medical Sciences.*

#### ARTIFICIAL ANUS IN A CHILD.

M. AMUSSAT presented a child 3 months old, in which he had established an artificial anus in the left lumbar region without opening the peritoneum. The operation was performed on account of congenital imperforate rectum; it being impossible to discover the termination of the intestine in the anal region. M. Amussat discovered in the iliac fossa a prominence which was more marked when the infant cried or made any effort. This swelling appeared to be formed by the terminal portion of the great intestine, which, instead of descending through the pelvis to the anus, stopped short in the iliac region; the operation was accordingly instituted, and proved successful. The child was perfectly recovered, and in as good health as others of its age, though the opening showed a constant disposition to close, and requires to be frequently dilated by sponge and other means. The disposition of parts presented in this case was considered favourable for



the operation which has been proposed by Martin and Dubois; viz. by the introduction of an instrument through the artificial anus in the lumbar region, to press the terminal cul-de-sac of the large intestine toward the perineum, and so establish an aperture in this situation with the view of allowing the lumbar orifice to close. But granting the possibility of conveniently carrying out this project, it was a question whether it would be right to expose the child, now in other respects enjoying good health, to the risk of this second operation.—*Bulletin de l'Acad. Royale de Médecine.*

### EXHIBITION OF MEDICINES.

ON the 8th of July, and on each succeeding Friday, Mr. Battley will exhibit at the Saunderian Museum, adjoining the London Ophthalmic Hospital, Moorfields, an extensive series of the vegetable substances of the materia medica, together with the most important medicines prepared from them. The order of the series will correspond, as far as possible, with the natural system of Decandolle.

The museum, containing smaller specimens of the entire materia medica, will be open daily from 9 to 5 for the use of medical students, of whom more than 2000 have in former years availed themselves of it. Mr. Battley, however, will at all times be happy to see gentlemen engaged in the practice of medicine who may feel disposed to visit his museum.

The rooms will be open from 9 to 5, and a short demonstration of the articles exhibited will generally be delivered on Fridays at 12.

Gentlemen wishing to visit the museum are requested to provide themselves with cards of admission, which may be obtained from Mr. Heward, Apothecary to the Royal London Ophthalmic Hospital, Moorfields.

Cripplegate, June 23, 1842.

### ROYAL COLLEGE OF SURGEONS.

#### LIST OF GENTLEMEN ADMITTED MEMBERS.

*Monday, June 20.*

J. Taylor.—G. F. White.—C. Shorten.—R. E. B. Horniblow.—T. O'Reilly.—M. Hamilton.—E. U. Berry.—S. Boyton.—B. Lever.—S. Balding.

*Friday, June 24, 1842.*

T. H. Clark.—J. M. Carey.—J. Duke.—T. B. Ward.—J. Y. Gibson.—J. B. Hyams.—T. Robertson.—E. W. Pilgrim.—J. G. Risk.—J. Honeywood.—J. C. Browne.—H. P. Allison.—F. G. Hammack.—W. Brett.

*Monday, June 27, 1842.*

T. Prince.—A. Brown.—J. Gregory.—A. G. Lamotte.—F. W. Alexander.—F. S. Haden.—H. M. Holman.—J. Findlay.

### APOTHECARIES' HALL.

#### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, June 23, 1842.*

W. M. Kelly, Lyme Regis, Dorset.—J. Mills, Exeter.—E. Cockey, Frome.—T. Coats, Newcastle.—H. W. Somerset, Milton, Wilts.—J. Percival, Rochdale, Lancashire.—J. C. Chappell, 14, George Street, Hanover Square.—S. Singleton, Tiverton.—J. S. Miles, Charterhouse, London.—R. Haynes, Liverpool.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, June 18, 1842.

Small Pox .....	10
Measles .....	23
Scarlatina .....	16
Whooping Cough .....	28
Croup .....	3
Thrush .....	4
Diarrhoea .....	11
Dysentery .....	9
Cholera .....	2
Influenza .....	0
Typhus .....	23
Erysipelas .....	1
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	133
Diseases of the Lungs, and other Organs of Respiration .....	222
Diseases of the Heart and Blood-vessels ....	14
Diseases of the Stomach, Liver, and other Organs of Digestion .....	49
Diseases of the Kidneys, &c. ....	4
Childbed .....	5
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	2
Rheumatism .....	3
Diseases of Joints, &c. ....	7
Ulcer .....	0
Fistula .....	1
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	98
Old Age or Natural Decay .....	50
Deaths by Violence, Privation, or Intemperance .....	26
Causes not specified .....	2

Deaths from all Causes ..... 752

### METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.*

June.	THERMOMETER.	BAROMETER.
Wednesday 22	from 49 to 68	29.74 to 29.75
Thursday . 23	46 68	29.79 29.74
Friday . . 24	48 67	29.65 29.64
Saturday . 25	46 64	29.63 29.67
Sunday . . 26	51 68	29.63 29.69
Monday . . 27	44 68	30.08 30.20
Tuesday . 28	40 73	30.21 30.12

Wind S.W., except on the 27th, when N.W. and West.

From the 22d to the 26th changeable, with showers; since generally clear.

Rain fallen, .19 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, JULY 8, 1842.

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## LECTURES

ON THE

### PRINCIPLES AND PRACTICE OF PHYSIC,

*Delivered at King's College, London,*

By DR. WATSON.

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*Chylous urine. Hæmaturia; its diagnosis, general and particular; local disorders of the urinary organs on which it depends; treatment. Abdominal tumors.*

I HOPE I have convinced you that the morbid conditions of the urine are worth studying. You have heard, probably, of the quacks who call themselves "water-doctors," and who pretend that, by mere inspection of the urine of a patient living at a distance, they can tell what is the matter with him, and how he may be cured. This skill, which looks like conjuration, the scientific physician of the present day does really possess. Of some very important forms of constitutional disorder, and of some specific local maladies, he reads the sure evidence in the sensible and chemical qualities of the secretion from the kidneys. And I do not hesitate to say, that a rightly instructed person might form a more accurate opinion respecting a sick man 50 miles off, and prescribe for him more judiciously, upon being furnished with a phial of his urine, than some practitioners whom I have known could do, if they had the patient bodily before them. You may learn much (and so, no doubt, you ought) by prying into the secrets of the night-chair: but you may learn more, I am persuaded, by the habitual perusal of the chamber-pot.

I have not yet quite done with the subject.

Sometimes urine is voided which appears

to contain *chyle*. It looks white and milky, and stiffens as it cools into a tremulous jelly, like *blanc mange*, and takes the shape of the vessel into which it was passed. The coagulum gradually separates again into two portions: one of which is liquid and whitish, and when left at rest for a few hours throws up to the surface a sort of creamy matter, containing (as cream does) a butyraceous or oily principle; the other is a delicate fibrinous mass, of flesh-like appearance, having a red tinge from the presence of some of the colouring matter of the blood. This is the character of the urine passed a few hours after a full meal. When the patient has long been fasting, the urine is simply opalescent, and the coagulum small and partial.

Dr. Prout attributes this curious deviation from the natural qualities of the urine to a double fault; first in the organs of assimilation, secondly, in the functions of the kidney. The chyle, from some derangement of the assimilative process, is not raised to the blood standard; and being unfit for its purpose, is ejected through the kidneys; and these organs, instead of converting it, as usual, into the lithate of ammonia, suffer it to pass through them unchanged.

Of this rare disorder I have not met with an instance. Dr. Prout has seen more or less of thirteen cases. Five of the patients were males, eight females. Two of the males, and one of the females, were below the age of puberty. Seven of the cases occurred in natives of the East or West Indies, or in persons who had lived for many years in hot climates. Mr. Thomas informs me, that during a residence of ten years in Barbadoes, he saw at least a dozen well-marked examples of chylous urine in negroes. It would seem, therefore, that a tropical climate predisposes certain individuals to this affection. In one case, drinking cold water while the body was warm seemed to have been the exciting cause; and exposure to

cold was thought to have had something to do with the attacks in other cases.

The general health suffers less than you might suppose. Two of the females, while labouring under the complaint, became pregnant, and brought forth healthy children: and one of the two lived nearly twenty years, with the disorder upon her all the time.

In the slighter cases there is usually some degree of feverishness, some uneasiness in the back and loins, some thirst, a dry skin, and torpid bowels. When the malady is more severe, the symptoms approach to those of diabetes; the thirst is more urgent, the appetite unnaturally craving; and there is some degree of emaciation and debility. In this severer variety the urine is apt to coagulate before it leaves the bladder; and the patient experiences difficulty in passing it, the urethra being blocked up by the clots. Dr. Prout states that he has known this to constitute the most troublesome symptom of the disease. In one of the fatal cases the body was examined, and the kidneys found perfectly healthy. Occasionally the complaint ceases of its own accord, even for years, and then recurs, without any apparent cause. We may conclude from these circumstances that it is a purely functional disorder.

With respect to treatment, little can be said. Dr. Prout has found several things of temporary service, in the chronic state of the affection. The mineral acids; astringents, such as alum, and the acetate of lead; opium; counter-irritation. But the suspended symptoms have always soon returned.

Lastly, the urine may contain *blood*: and I proceed to consider some of the phenomena that occur in connexion with *hæmaturia*; under which term I would comprehend every kind of bleeding from the urinary organs.

Blood alters, of course, the colour of urine with which it is mixed; giving it, in some instances, a bright red tinge, and causing it, in others, to assume a dark hue; to become brown, like coffee, or even to approach to blackness. Hence we are sometimes too ready to conclude that urine of a distinctly red colour, or so very dark as to appear almost black, derives its peculiar tint from blood that has somehow mingled with it.

But, in truth, urine may be perfectly red, or nearly black, and yet be quite free from blood. There are certain substances which, when taken as food, invariably impart a red colour to the urine. One of these is the prickly pear, or Indian fig, as it is sometimes called, the *cactus opuntia* of botanists. When the Spaniards first took possession of

America, many of them were alarmed by observing that they passed what they supposed to be bloody urine: but it was soon discovered that the red colour of the secretion was owing to the liberal use they made of that fruit. Dr. Hennen, in his book on *Military Surgery*, quotes a precisely similar example from Elliot's Journal of his Travels for determining the boundary of the United States. He says that his "people ate very plentifully of this substance at an island of the Mississippi (Kayo-ani), and were not a little surprised the next morning at finding their urine appear as if it had been highly tinged with cochineal. No inconvenience resulted from it. It would seem (he continues) that the juice of this plant may be analysed into a crimson dye by other processes besides that of the cochineal insect."

Another vegetable substance with which, in this country, we are more familiar, and which will produce the same effect, is *beet-root*. Desault relates the case of a person who noticed that he every morning voided urine of a deep red colour; exactly such as would result from adding fresh blood to that liquid, except that no deposit took place. The man became frightened at this, and consulted M. Roux, who, after some examination, began to suspect that the water owed its red appearance to some other cause than an admixture of blood. It turned out that his patient was in the habit of supping every night upon the red beet-root; and as soon as, by M. Roux's advice, he relinquished this article of diet, he was freed at once from his supposed bloody urine, and from his fears.

A similar tinge is said to be given to the urine by the use of *madder* as food, by some species of strawberries, and by drinks made of sorrel.

It is right that you should know these facts: for by eating large quantities of such substances, and by complaining of sensations which they do not really feel, impostors may endeavour, without any difficulty or pain, or danger to themselves, to deceive others into a belief that they are suffering under some serious and disqualifying disease, and are proper objects of charity. Moreover, a knowledge of the effects of these vegetable matters may sometimes enable you, as in the case mentioned by Desault, to remove unfounded anxiety and alarm from the minds of persons who are innocently and unconsciously giving themselves red urine.

The natural tint of the urine inclines towards redness, independently of any admixture of blood, in many instances of fever, and of acute inflammation. Occasionally urine of a pink colour is passed by persons who are subject to obstinate dyspep-

via connected with organic disease. This pink tint is most apparent when the water is contained in an opaque, shallow, white vessel.

Again, urine of so deep a colour as to be called, in common parlance, *black*, may or may not owe that hue to the presence of blood. When blood is the cause of the unnatural colour, the blackness must be ascribed to the chemical action of some free acid upon the blood: as I shewed you formerly to be the case with blood that is vomited, in hæmatemesis.

I also pointed out to you some little while since, that the urine, in jaundice, sometimes seems to be black, when it is collected in large quantity, and in a deep vessel. This colour is merely a concentration of yellowness, as appears at once by diluting the urine with water. It then assumes a bright yellow colour. The aspect of the skin in icterus will always secure you against mistaking or overlooking this cause of black urine.

There has been observed, also, though very rarely, a form of black urine, depending upon the presence in that secretion of a peculiar principle to which Dr. Marcet gave the name of melanic acid. The only specimen of really black urine that I ever saw, was shewn to me by Dr. Prout; who knew nothing, however, of the circumstances under which it was voided. It appeared to me to be full of coal-dust.

With these two exceptions, almost all urine that is of a very dark or blackish colour owes that quality to the circumstance of its containing blood, which has been more or less altered, by various causes, from its original appearance.

When blood is present in any considerable quantity, a portion of it subsides to the bottom of the vessel, and may be recognized without any difficulty. And even when there is not enough blood to give a marked and characteristic deposit, a very small admixture of it will be found to disturb the natural transparency of the urine, rendering it of a smoke-brown, or dull cherry colour: whereas the reddish or pink urine which contains no blood is clear and untroubled; and if, on cooling, it throws down a sediment, that sediment may be redissolved by heating the urine—a result which does not take place when a portion of blood has been deposited. Another rough test is, that a mixture of urine and blood tinges a piece of white linen dipped into it, of a red colour. But the simplest and most satisfactory criterion is afforded by gradually raising the suspected urine to the boiling temperature. If it contains blood, a greyish brown flocculent precipitate, consisting of coagulated albumen tinged with the colouring matter of the blood, will form, and gradually subside, and

leave the supernatant liquid clear, and with its natural tint.

We have by no means accomplished the diagnosis when we have merely ascertained that there is blood in the urine; and that the case is a case of hæmaturia. The question remains, of what is such hæmaturia a sign? The blood emerges from the urethra, but it may have been poured out at any point of a long and somewhat complex tract of mucous membrane. It may have proceeded from one or both of the kidneys; from each or either ureter; from the bladder; from the prostate gland; or from the urethra.

Hæmaturia strictly idiopathic must be very rare. Cullen remarks that neither he nor any of his friends had ever met with an instance of it. I shall mention presently the only example of hæmorrhage from the urinary organs, apparently idiopathic, that has fallen under my own notice.

Blood is excreted with the urine in that acute affection of the kidney which I have already spoken of as lying at the root of most, if not all cases of febrile dropsy. The albuminous urine proper to the chronic form of Bright's disease sometimes contains the colouring matter as well as the serum of the blood. Hæmaturia is occasionally, I believe, vicarious of some other hæmorrhage, and especially of bleeding from the hæmorrhoidal vessels: so that it is always right, in obscure cases, to inquire whether the patient has been habitually subject to hæmorrhage from the rectum; and if so, whether that hæmorrhage is suspended. These cases have even been called *hæmorrhoides vesicæ*.

Hæmaturia occurs also, independently of any strictly local complaint, in the course of certain disorders which affect the system at large; especially in scurvy and purpura hæmorrhagica. Bloody urine is sometimes a symptom, and one of the most fatal augury, in typhus fever, small-pox, measles, and the plague.

But setting aside these more general forms of hæmaturia, let us inquire what local affections of the urinary organs themselves may give rise to hæmorrhage; and how, under different circumstances, we are to interpret this symptom.

One very common source of hæmorrhage from the urinary passages, is the presence within them of calculous matter. The pressure occasioned by the aggregation of the earthy mass, when it is formed in the kidney, or by its accidental change of position, lacerates, or lays open by ulceration, some of the smaller vessels with which it is in contact. And in those cases in which a calculus descends into the bladder, and is ultimately voided, it may, in succession, give rise to hæmorrhage, first from the kidney from

which it is separated; secondly, from the narrow tube of the ureter through which it is forced; thirdly from the bladder which it enters, and wounds, or irritates; and fourthly from the urethra in the last stage of its progress out of the body.

There will be the same liability to hæmaturia, if the concretion, instead of coming down from the kidney, is formed originally in the bladder. The appearance of blood in the urine suggests therefore, in many cases, the fearful suspicion, that there is, or is likely to be, a stone in the bladder. Dr. Heberden, in his *Commentaries*, says "urine made of a deep coffee colour, or manifestly mixed with a large quantity of blood, has within my experience been very rarely the effect of any thing but a stone in the urinary passages. I therefore suppose a strong probability of this cause, whenever I see this appearance."

Again, blood may proceed from the kidney, or from the bladder, in consequence of malignant fungous growths, to which those parts are liable: a disease which, though more surely fatal than the stone, is scarcely, to the unhappy subject of it, so appalling.

Hæmorrhage may take place from the surface of the bladder from chronic disease, not cancerous, of that membrane. Mr. Howship has recorded an instance of this kind which occurred in Mr. Heaviside's practice. An old East Indian, who had long been subject to nephritic complaints, was suddenly seized with what was thought to be retention of urine. A catheter was passed, but as no water flowed it was supposed that it had not entered the bladder, in the situation of which there was a manifest tumor. The patient died the next day; and the bladder was found distended by a very large coagulum of blood which had come from the diseased mucous membrane. There was no trace of hæmorrhage in the kidneys, nor in the ureters.

I hold in my hand a preparation showing disease of the prostate gland, which had been accompanied by hæmaturia.

Now we judge of the exact seat of the hæmorrhage, and of its cause, partly by the nature and appearance of the effused blood, and partly by the symptoms that precede or accompany the bleeding.

Dr. Prout states that "when blood is derived from the *kidney*, it is in general equally diffused throughout the whole urine: on the contrary, when derived from the bladder, the blood for the most part comes away in greater or less quantity at the termination of the discharge, the urine having previously flowed off nearly pure."

There are also certain modifications of the sensible qualities of the excreted blood, by means of which the same distinguished phy-

sician thinks he can pronounce, with considerable confidence, that the hæmorrhage is owing to malignant disease. "The red particles of the blood (he says) discharged in the earlier stages of fungoid disease have often a remarkable appearance, and appear to the eye larger than natural; so that after they have subsided to the bottom of the urine, they at first sight somewhat resemble grains of lithic acid gravel, and, like that substance, when the vessel is inclined, may be distinctly seen to roll along the bottom. From this peculiar appearance of the red particles of the blood, the presence of malignant disease may be often suspected before the symptoms assume a decided character." In a more advanced stage of the disease, there is often a dark-coloured offensive bloody sanies in the urine, and more or less of mechanical impediment in passing it. I should conceive that the microscope might aid the diagnosis of such cases.

There is one phenomenon which, whenever it occurs, is very characteristic of hæmorrhage from the kidney, or the commencement of the ureter. I mean the expulsion, with the urine, of slender cylindrical pieces of fibrin, which have evidently been moulded in the ureter, and subsequently washed down into the bladder by the descending urine. These little coagula are commonly of a whitish colour, the red particles of the blood having been removed; and they look like slim maggots, or small worms. They denote, with much certainty, that the hæmorrhage which they accompany is renal.

Such, then, are some of the points of diagnosis furnished by the qualities of the excreted fluid itself.

The bleeding may be presumed to come from the kidney, or from the upper part of the ureter, when it is accompanied or preceded by a sensation of heat, or of weight, or by some degree of pain, in the situation of the kidney; especially if these uneasy feelings are confined to one side of the body. This presumption will of course be strengthened if calculi have been known to descend from the kidney; and converted into certainty if the patient suffers, together with the hæmaturia, a fit of the gravel; and if there be no symptom of stone, or of disease in the bladder.

On the other hand, when no symptoms referable to the kidney or the ureter are present, while there are signs of stone, or of disease of the bladder, or of a diseased prostate—a mixture of mucus with the blood; occasional retention, or a sudden stop in the stream, of urine; pain referred to the glans penis immediately after the bladder is emptied—then we conclude that the blood proceeds originally from that receptacle.

When pure blood comes away, either *guttatim*, or in a stream, unmixed with



urine, and neither preceded nor accompanied by any desire to make water, it is probable that the *urethra* is the locus of the hæmorrhage.

Bleeding from the surface of the urethra doubtless may, and commonly does, proceed from some mechanical injury done to that channel: as in the passage outwards of a fragment of stone, or inwards of a surgical instrument. But it is probable that blood is sometimes exhaled from the same membrane in considerable quantity, under circumstances which favour or produce a strong determination of blood to the genital organs. A young man came to the Middlesex Hospital with hæmorrhage from the urethra, and said that he had lost a considerable quantity of blood in this way, within a few hours. The hæmorrhage appeared to have been the consequence of excessive indulgence in sexual intercourse. His own account of the matter was that he had passed the night with a female, in whom the monthly period had just returned; and he ignorantly fancied that the hæmorrhage from his own person was the result of a sort of contagion. However, the bleeding was permanently arrested by the introduction of a bougie, which was allowed to remain for a short time in the urethra. This was the solitary instance to which I alluded just now, of (perhaps) idiopathic hæmorrhage, occurring within my own knowledge. When the hæmorrhage comes originally from the urethra, the blood may regurgitate into the bladder, and coagulate there; and mislead an observer into the belief that the hæmorrhage was vesical.

It appears then, that, in many instances, certain local symptoms are associated with hæmaturia, and point distinctly to the part of the urinary apparatus whence the blood proceeds.

But many cases are very obscure. Blood sometimes appears, mixed in greater or less quantity with the urine, when there is no pain, nor any other sign which would lead us to fix upon one part rather than another as the source of the hæmorrhage. Now I believe that hæmaturia, bearing this indeterminate character, will generally turn out to be *renal*, and to depend upon earthy concretions in the kidney. It is true that the hæmorrhage which results from cancerous disorganization, whether of the kidneys or of the bladder, may also be painless. But cancerous disease of these organs (unless it extends from parts in the neighbourhood, as from the rectum, or from the uterus, to the bladder) is very rare; and when it does occur, the nature of the case may usually be ascertained from those peculiar qualities of the effused blood which I have mentioned as being characteristic of malignant growths.

A calculus can seldom remain long in the

*bladder*, at any rate will seldom cause bloody urine, without giving some other notice of its presence there: but concretions form in the kidney, sometimes in great numbers, and reach a considerable size, and remain there long, without furnishing any signal from which we might suspect their existence; except (perhaps) the occurrence of hæmaturia. We know this, because calculi are frequently met with in the kidneys of persons who had never suffered any pain or obvious derangement of the urinary organs during life; and because, in other persons, in whom such calculi pass down from the kidney towards the bladder, the first notice of their existence is often given by the acute suffering they inflict during their transit through the narrow ureter.

Yet though calculi may lodge in the infundibula, or in the pelvis, of the kidney, without manifesting their presence by exciting pain, it is very conceivable that, by progressive enlargement, they may lay open, or, by accidental change of position, they may wound, some of the smaller blood-vessels of the part, and so give rise to painless hæmaturia. It will strengthen the presumption that such is the source of the bleeding, if it has succeeded (as hæmorrhage from the urinary passages often does succeed) to a fall, a shock, or jar of the body, or jolting on horseback or in a carriage. Similar movements may occasion bloody urine when there is stone in the bladder; but then the irritation will be *felt* in that sensible part; the hæmaturia will *not* be painless; the bleeding will not be the only symptom.

It is, then, I say, my belief that very many of the obscure cases of hæmaturia may be referred to renal calculi: and if this view of the subject be correct, it will render it probable that the alleged instances of idiopathic hæmorrhage from the kidneys ought thereby to be reduced in number.

The expulsion of the blood in hæmaturia, whether it be painful or not, is sometimes attended with severe rigors. I mentioned before, that, in some persons, almost any irritation of the urethra, the passing a bougie, for example, will bring on a shivering fit. I had some time ago a patient under my care in the hospital, who had hæmaturia of an obscure kind, and the discharge of blood was always marked by a smart rigor. Dr. Prout speaks of an instance of obstinate hæmaturia in which a shaking fit constantly preceded the hæmorrhage. Dr. Elliotson, too, in one of his lectures, gives an account of a case of intermittent hæmaturia. The patient was under his care in St. Thomas's Hospital, and had formerly had the Walcheren fever. He was admitted for ague, and every time that the cold stage of his attack came

on, he voided a quantity of pure blood from the urethra. He was cured, by quina, both of his ague, and of his hæmorrhage.

If we may trust to the records of physic, instances of periodic hæmaturia are not uncommon.

One circumstance yet remains, worth noticing, in respect to hæmaturia; and it depends upon the hæmorrhage itself rather than upon the disease of which the bleeding is a sign. I allude to the coagulation of the effused blood in the bladder, however it may have got there. This circumstance is sometimes the source of much inconvenience, and suffering, and even of danger, to the patient. It may cause retention of urine, and all its evil consequences; and a still worse event is, that the coagulum sometimes supplies a nucleus, around which calculous matter is deposited, and thus lays the foundation of that horrible malady "the stone."

You will perceive, from what I have said, that the *treatment* of hæmaturia resolves itself, in most cases, into the treatment of the disorder or bodily condition with which the hæmorrhage is associated, and of which it is merely a symptom.

Sometimes, however, the bleeding itself is so profuse, or so long continued, as to require direct efforts on our part towards its restraint.

"When (says Dr. Prout) the bladder becomes distended with blood, and complete retention of urine in consequence takes place, recourse must be had to a large-eyed catheter, and an exhausting syringe, by the aid of which, and the occasional injection of cold water, the coagula may be broken down and removed. If the hæmorrhage be so profuse that the bladder becomes again distended with blood in a very short time, the injection of cold water into the rectum or bladder is sometimes of great use; and should these means fail, from twenty to forty grains of alum may be dissolved in each pint of water injected into the bladder; a remedy that seldom fails to check the bleeding, even when the cause is malignant disease. I have never known any unpleasant consequences follow the use of this expedient, and have seen it immediately arrest the most formidable hæmorrhage, when all other means had failed; and when the bladder had repeatedly become distended with blood, almost immediately after its removal."

Among remedies given by the mouth, the same physician thinks highly of the acetate of lead. I have mentioned before, in these lectures, a nostrum called, after the name of its inventor, *Ruspini's styptic*. This has often been known to put a stop to hæmorrhage which had resisted other remedies. I will read you one example of this from Sir Benjamin Brodie's published lectures.

Speaking of hæmaturia, dependent upon disease of the prostate gland, he says:—

"Those medicines which operate as styptics when taken internally, and which are useful in cases of hæmorrhage from the lungs, are also useful in hæmorrhage from the prostate. I had a patient with very diseased prostate. A frightful hæmorrhage took place. The usual methods of treatment were adopted, but were of no avail. The skin became pale, the pulse became weak, and the patient was exhausted; yet the bleeding continued. Large quantities of blood were drawn off with the catheter: nevertheless the bladder continued to become more and more distended with blood, and was felt prominent in the belly as high as the navel. All other remedies having failed, I gave the patient a dose of the nostrum known by the name of Ruspini's styptic, and repeated the dose two or three times in the course of the next twelve hours. In about half an hour after the first dose was taken the hæmorrhage ceased; and it never returned. The patient lived a year and a half afterwards, and there was no reason to believe that any ultimate harm arose from the bleeding."

For a long while this nostrum seems to have baffled analysis. The late Dr. Maton told me that Dr. Wollaston had examined it, and had arrived at the negative conclusion, that it contained no metallic substance. Dr. A. T. Thomson has since announced that it mainly consists of a solution of *gallic acid* in alcohol diluted with rose water.

There is no substance more highly spoken of as a remedy for internal hæmorrhages by foreigners, and especially by the French, than the extract of *Rhatany* root, the *Krameria* of our Pharmacopœia. A female was sent to me by my colleague Mr. Arnott, complaining that for some weeks she had been passing bloody urine. She had gone through the ordinary routine of treatment without benefit. There were no symptoms present which threw any light on the precise source or cause of the hæmorrhage. I recommended a trial of the rhatany, and she began to take a scruple of the extract, mixed with water, three times a day. As in Sir Benjamin Brodie's case, the hæmaturia ceased after the first dose, and it did not return for many months. I mention this instance the rather, because the *gallic acid* enters into the composition of this vegetable extract also.

Now the gallic acid is one of those substances which, when introduced through the digestive organs into the blood, passes through the round of the circulation unchanged, and reappears in the urine. We may conceive, therefore, that it stays internal hæmorrhage by exerting its astringent property upon the ultimate capillary blood-

vessels in its passage through them. It certainly is applied, in solution, after its elimination from the blood, to the urinary passages; and thus, in hæmaturia, it may be presumed to produce its styptic effect upon the bleeding surface.

To the same principle are owing, I believe, the astringent and styptic virtues of the *uva ursi*, *bistort*, *tormentil*, the *pomegranate*, *kino*, *catechu*, and the several preparations of *gall-nuts*. I am sorry that I have not had an opportunity of trying the gallic acid itself, in its separate state; for I have heard of several instances of its successful employment in cases of internal hæmorrhage. If, as I believe, it really has this power, it is very desirable that it should be prescribed in a more definite and precise manner than is afforded by its natural combinations with so many different vegetable matters.

I am unwilling to take leave of the cavity of the abdomen, without saying a few words (very few they must be) respecting the various kinds of *tumor* to which it is obnoxious. It may seem strange that the diagnosis of abdominal tumors, which manifest themselves to the touch, and to the sight, should be so difficult and puzzling as it often is. I mentioned some reasons for this before: the loose and shifting manner in which some of the viscera of the belly are packed and fastened; their liability to enlarge beyond their natural limits; their accidental dislocations under disease. It would be in vain to attempt even a sketch of the infinite variety of these deviations from the healthy state. Every case of abdominal tumor forms a separate object of study, and must be judged of by its proper circumstances. All that I can profess to do, is to offer you some rough hints on this interesting subject.

Some kinds of tumor result from morbid growths; such are all the varieties of cancer: some from the presence and multiplication of parasites; of which we have examples in collections of *hydatids*: some are produced by the distension of hollow organs; as where concretions, or *fæcal matters*, or *gases*, lodge in the intestines: some consist in the mere enlargement of parts.

Let us enumerate the principal of these; that you may know what chiefly to expect.

1. There are, I say, tumors from lodgements in the *bowels*; and these are more hopeful than most kinds of abdominal tumors. Sometimes the stomach, or some part of the intestinal canal, is distended in consequence of a mechanical impediment to the course of its contents: and this impediment may be invincible.

2. *Ovarian* tumors are very common. Of these I spoke at some length in a former lecture.

3. The *liver* is very liable to enlargement: either from simple congestion of blood; or from the interstitial deposit of adipous matter; or from the intrusion of malignant growths; or from colonies of *hydatids*.

4. So also the *spleen* swells, from fulness of blood, or from specific deposits in its substance.

5. The *kidneys* sometimes attain a vast size; being occupied by malignant disease, or swollen by pus that finds no vent.

6. Enlargements of the *mesenteric glands*; cancerous degeneration of the peritoneum, especially where it forms the *omentum*; tumors connected with the *uterus*; aneurisms of the *aorta*; constitute other species of abdominal swelling, which I simply mention without further comment.

Now our judgment of the character of a given tumor is naturally influenced by its *place*. In the right hypochondrium, we suspect the liver; in the left, the spleen; in the epigastric region, the stomach; in the hypogastric, the womb; in either flank, an ovary, or perhaps a kidney; in the track of the colon, we guess at *fæcal collections*.

But sometimes the situation of the tumor fits more than one, or than two, suppositions. Between the ribs and the ilium on the right side we may have an enlarged ovary, a tumid kidney, a distended cæcum. A prominence in the epigastrium may be due to cancer of the stomach, to an infarcted transverse colon, to a ventral aneurism. Above the pubes, the distended bladder, or the enlarged uterus, may equally project. The sigmoid flexure of the colon loaded with *fæces*, the left kidney exaggerated by disease, a bulky ovary, may either of them occupy the same sinistral space.

Moreover, the colon deviates strangely, and not seldom, from its natural course and position: and the magnified viscera may invade, by their displacement, or by their irregular expansion, the regions that are proper to other organs.

Our conjectures are assisted by the associated symptoms, and by observation of the regular performance, or of the disturbance, of particular functions. Yet here, also, we meet with continual sources of fallacy. Pressure from a tumor without may, as well as infarction within, impede the passage of alimentary matters through the bowels, of urine through the ureters; and cause, in the one case, flatulence and tormina, in the other, retention or suppression of urine. Growths foreign to the liver may, nevertheless, press upon its excretory ducts, and occasion jaundice. And so of other parts

and functions. I mean, that the functions prominently deranged are not always the functions of the part occupied by the tumor, but of organs which are secondarily and accidentally subjected to its disturbing influence. Your sagacity will be abundantly tried in balancing the evidence of different symptoms in these obscure, yet palpable, forms of disease: and after all you will often doubt; and often, when you do not doubt, you will mistake.

Enlargement of the liver may usually be distinguished from other tumors of the right hypochondrium, by *percussion*. Try from the clavicle downwards. At first, you get a hollow sound. Then, a little below the nipple perhaps, (for the spot varies much in different subjects) the sound begins to grow dull. If this dullness be traceable, without change or interruption, to the tumor, the inference is strong that the tumor is hepatic. Any other tumor there situate leaves, most commonly, when the patient is recumbent, a palpable sulcus above it; or a space in which the sound, upon percussion, is different from that which is yielded by the liver.

Percussion helps us to discriminate an ovarian from a renal tumor. When the swelling is large, the intestines lie behind the one, in front of the other: and the sound is affected accordingly.

Tumors that are readily *moveable*, are generally intestinal, omental, or ovarian.

A pulsating tumor is not necessarily an aneurism. The healthy artery will lift almost any sort of hard swelling that happens to lie directly over it.

The occurrence of hæmatemesis or melaena would corroborate your belief that a tumor in the right hypochondrium was hepatic—in the left, was splenic.

Even when you are satisfied as to the organ affected, there comes another question, scarcely, in some cases, less difficult than the first—What is the *nature* of the tumor.

Suppose, for the sake of illustration, that our inquiry relates to the liver. If the tumor be large, smooth, roundish, of slow growth, and the general health is not materially deranged, it is, most likely, an *Hydatid* tumor. If along the edge and upon the surface of the augmented liver, you can feel large inequalities and projections, and if the complexion and general state of the patient are expressive of failing health, the enlargement is, in all probability, *cancerous*, and if there be other traces of carcinoma in the system, this conclusion becomes almost certain. Small hard irregularities betoken the *lobular* liver; which is, sooner or later, accompanied by ascites. When, without pain or jaundice, the liver of a phthisical

patient transgresses its natural boundary, it is, in all probability, a *fatty* liver.

By applying a similar method of investigation to other ventral enlargements, you may frequently hit the right scent, and trace the mischief to its true source. To treat the subject in detail would require a volume. I may refer you to a series of papers by Dr. Bright, in the *Guy's Hospital Reports*; where you will find a host of examples, and much valuable information, concerning the most common and the most important kinds of "abdominal tumors and intumescence."

### CASE OF IRREGULARITY IN THE POSITION OF RIGHT KIDNEY.

*To the Editor of the Medical Gazette.*

SIR,

IF the following instance of irregularity in the position of the right kidney, and supply of its blood, should appear to you sufficiently important to merit insertion, I shall feel obliged by your recording it in your journal.

I remain, sir,  
Your obedient servant,  
ALFRED LORD.

Islington, June 25, 1842.

Whilst in the country a few weeks since, I was invited by my friend Mr. Harris, of Northiam, in Sussex, to accompany him to a post-mortem examination, during which I was desirous of inspecting the kidneys; but on searching for the right it was for a while no where to be found; and I was about to conclude that frugal nature had, in this instance, supplied but one, when a gentleman who was present discovered it seated upon the verge of the pelvis, occupying a space corresponding to the bodies of the two last lumbar vertebræ, and the first portion of the sacrum; and instead of being supplied with one artery, arising between the mesenterics, it received two, sent off from the bifurcation of the aorta. There was no irregularity in the arrangement of the veins.

ON THE  
RELATIVE SIZES OF THE TRUNKS  
AND BRANCHES OF ARTERIES.

By JAMES PAGET,

Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c.

(For the London Medical Gazette.)

It was long generally believed that the area of a transverse section of the trunk of an artery is less than the sum of the areas of sections of the branches proceeding from it: in other words, that, taking the whole arterial system together, and considering the interior of the aorta, and of all the branches of a certain size which successively arise from it as one cavity, its form might be compared to that of a cone, with its apex at the heart, and its base at the terminations of the systemic arteries. It does not appear that the correctness of this opinion was doubted, till a paper was published by Mr. Ferneley in the *MEDICAL GAZETTE*\*, in which he stated, that in eight measurements, the squares of the diameters of injected arterial trunks were found so nearly equal to the sum of the squares of the diameters of the branches proceeding from them, that the difference might be fairly attributed to inaccuracy of measurement. He believes, therefore, that the joint areas of sections of branches are, in general, equal to the area of the trunk: and on this belief he founds several ingenious conclusions.

The results of the following measurements differ both from Mr. Ferneley's and from those of all preceding observers: for they seem to prove that there is not one constant relation of size between arterial trunks and branches: that in some cases the area of a transverse section of the trunk is less, in others more, than the sum of the areas of sections of its branches; but that, for similar arteries in different persons, the same relation generally holds.

The measurements were made on uninjected arteries. After taking them from the body and dissecting the surrounding tissues from them, they were laid open and flattened by a slight pressure with the finger, and the inter-

nal circumference was then measured carefully, and in most cases, repeatedly, with compasses and a scale accurately graduated to decimal parts of inches. To avoid any error from inequality of contraction after death, the same arteries were often measured at different periods after their removal from the body, or after long immersion in water. The age and sex of the person from whom they were taken, the disease which had proved fatal, and the time after death, were also noticed. By these means every source of fallacy seemed to be obviated; and it will probably be admitted, that the difference between the results of these and those of other measurements, must be referred to errors of the latter.

It is, indeed, scarcely possible that comparative measurements made upon injected arteries should be exact: for, among many sources of error, if the force of the injection be uniform in all the arterial walls, it must dilate the weakest most; if it distend both the trunk and the branches beyond their natural size, the elasticity of the stronger may be sufficient to press the injection before it has cooled into the weaker, and so to distend them more; and unless the whole arterial canal lie on an exact level, the injection, while still fluid must gravitate to the depending parts. So that, on the whole, the evidence drawn from measurements made under these circumstances should have had little weight, even if the results afforded by them to different observers had been consistent.

The arrangement of the following tables will be easily intelligible. In the first column are the age, sex, and other circumstances of the body from which the arteries were taken; in the second, are the names of the arteries measured; in the third, the circumferences of each; in the fourth, the squares of the circumferences of the trunks; in the fifth, the sums of the squares of the circumferences of the corresponding branches, or of them and the continued trunk. A comparison of the numbers in the fourth and fifth columns will, therefore, in each case, show the proportion which the area of a section of the trunk bears to the combined areas of sections of its branches, or which the contents of a given length of an arterial trunk bear to the whole contents of equal lengths of all its branches.



Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.		
I. Fem. 28 ; 30 hours p.m.	Aorta before bi- furcation.	1.1	1.21	.9849	V. Male, 35. Emphy- sema of the lungs; granular kidneys*. 70 hours p.m.	Aorta above the sup. mesenteric.	2.1	4.41	4.9344		
	Left c. iliac.	.68				Sup. mesenteric.	.8				
	Right c. iliac.	.7				Right renal.	.55				
	Art. sacr. med.	.15				Left renal.	.52				
						2d Left renal.	.2				
	Aorta before the great branches.	2.4	5.76	5.8475		Continued trunk.	1.85				
Innominata.	1.15		Lumbar, four, each,			.15					
Left carotid.	.75										
Right carotid.	.85										
Aorta after the branches.	1.8										
II. Fem. 63 ; 36 hours p.m.	Aorta before bi- furcation.	1.5	2.25	2.06			Aorta above bi- furcation.	1.85		3.4225	3.0025
	Left c. iliac.	.9				Right c. iliac.	1.25				
	Right c. iliac.	1.1				Left c. iliac.	1.2				
	Art. sacr. med.	.2									
	Aorta before the great branches.	3.	9.	7.3835		Left c. iliac.	1.2	1.44	1.3876		
Innominata.	1.1		External iliac.		.9						
Left carotid.	.8		Internal iliac.		.76						
Left subclavian.	1.05										
Aorta below the branches.	2.1										
III. Male, 33. Phthisis, 20 hours p.m.	Aorta before the great branches.	2.4	5.76	6.5194	VI. Fem. 28. 72 hours p.m.	Right com. carot.	.7	.49	.4450		
	Innominata.	1.12				Internal carotid an inch from the origin.	.45				
	Left carotid.	.75				External carotid.	.45				
	Left subclavian.	.9				Super. laryngeal.	.2				
	Irreg. branch.	.3									
	Continued trunk.	1.95				Left com. carotid.	.68	.4624			
						Internal carotid.	.5				
						External carotid above the laryn- geal and lingual.	.45				
						Super. laryngeal.	.2				
						Lingual.	.2				
	Aorta above the bifurcation.	1.5	2.25	1.8425		Aorta above cæ- liac.	1.55	2.4025	2.6629		
	Right c. iliac.	.95			Right renal.	.5					
	Left c. iliac.	.9			Left renal.	.4					
	Art. sacr. med.	.2			Cæliac axis.	.6					
					Sup. mesenteric.	.45					
IV. Diseased ankle ; granular kidneys. Male, 30 ; 50 hours p.m.	Aorta before bi- furcation.	1.3	1.69	1.4675		Continued trunk.	1.2				
	Right c. iliac.	.85			Small arteries, eight, each.	.15					
	Left c. iliac.	.85									
	Art. sacr. med.	.15									
	Right com. iliac.	.85	.7225	.7604							
	External iliac.	.7									
	Internal iliac.	.52									
	Left com. iliac.	.85	.7225	.74							
	External iliac.	.7									
	Internal iliac.	.5									

\* A great enlargement of the arteries, both in length and in calibre, occurs in all the cases of this disease in which the heart is enlarged. The fact makes it nearly certain that there is a great obstruction to the passage of the blood through the systemic capillaries, an obstruction which is the immediate cause of the attendant dropsy, and which is probably due to the excess of urea in the blood altering, as many salts do, its degree or manner of adhesion to the walls of the vessels.

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Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	
VI. Con- tinued.	Right renal.	·48	·2304	·2825	VIII. Con- tinued.	Left com. iliac.	1·1	1·21	1·7225	
	First branch.	·35				External iliac.	1·			
	Second branch.	·4				Internal iliac.	·85			
	Aorta above the bifurcation.	1·2	1·44	1·225	IX. Male, 62. Erysi- pelas ; granular kidneys.	Abd. Aorta.	1·7	2·89	2·88	
	Left iliac.	·75				Right iliac.	1·2			
	Right iliac.	·8				Left iliac.	1·2			
	Right com. iliac.	·8	·64	·6725		Right com. iliac.	1·2	1·44	1·5049	
	Internal iliac.	·5				External iliac.	·93			
	External iliac.	·65				Internal iliac.	·8			
	Left com. iliac.	·75	·5625	·7124	Left com. iliac.	1·2	1·44	1·5425		
External iliac.	·68	External iliac.			·95					
Internal iliac.	·5	Internal iliac.			·8					
Aorta before the great branches.	2·4	5·76	7·4425	X. Male, 55. Diseased aortic valves ; very large heart.	Aorta before branches.	4·3	18·49	13·825		
Innominate.	1·2				Innominate.	2·2				
Left carotid.	·75				Left carotid.	·95				
Left subclavian.	1·2				Left subclavian.	1·35				
Continued trunk.	2·				Cont. trunk.	2·5				
VII. Fem. 4. Cancrum oris.	Aorta.	·55	·3025	·2669	XI. Male, 44. Comp. fracture. 36 hours p.m.	Aorta before branches.	2·9	8·41	8·8050	
	Left iliac.	·38				Innominate.	1·3			
	Right iliac.	·35				Left carotid.	·65			
	Left com. iliac.	·38	·1444	·1517		Left subclavian.	1·05			
	External iliac.	·29			Cont. trunk.	2·3				
	Internal iliac.	·26			XII. Male, 30. Phthisis. 60 hours p.m.	Right carotid.	·75	·5625	·61	
	Right com. iliac.	·35	·1225	·1460		Internal carotid an inch after the origin.	·5			
	External iliac.	·28				External carotid.	·6			
Internal iliac.	·26	Left carotid.				·8	·64			·61
Aorta above the branches.	1·3	1·49	2·18		Internal carotid an inch after the origin.	·5				
Innominate.	·6				External carotid.	·6				
Left carotid.	·5				Right external carotid.	·6	·36	·45		
Left subclavian.	·6				Sup. thyroid.	·4				
Continued trunk.	1·1				Facial and lingual by com. tr.	·4				
VIII. Male, 40. Granular kidneys ; enlarged heart.	Aorta before the branches.	3·	9·		8·7325		Left carotid.	·8	·64	·61
	Innominate.	1·2					Internal carotid an inch after the origin.	·5		
	Left carotid.	·75					External carotid.	·6		
	Left subclavian.	1·2	2·65		Right external carotid.		·6	·36	·45	
	Cont. trunk.	2·3			Sup. thyroid.		·4			
	Aorta.	1·7			Facial and lingual by com. tr.		·4			
Left iliac.	1·1	2·65	Occipital.	·2	·45					
Right iliac.	1·2		Cont. trunk.	·3						
Right com. iliac.	1·2		1·44	1·3						
External iliac.	·9									
Internal iliac.	·7									

Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circumference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circumference of Trunk.	Sum of Squares of Circumferences of Branches.
XII. Continued.	Left external carotid.	.6	.36	.4075	XIII. Male, 14. Measles with bronchitis	Aorta before branches.	2.25	5.0625	4.8324
	Sup. thyroid.	.4				Innominate.	1.		
	Occipital.	.15				Left carotid.	.68		
	Lingual.	.25				Left subclavian.	.9		
	Ascend. pharyng.	.1				Cont. trunk an inch from branches.	1.6		
	Facial.	.25							
	Cont. trunk.	.3							
	Trunk of right subclavian.	.8	.64	.7114		Aorta below phrenics.	1.42	2.0164	2.48
	Cervic. prof.	.25				Cæliac.	.5		
	Thyroid axis.	.25				Sup. mesenteric.	.6		
	Vertebral.	.4				Right renal.	.45		
	Internal mammary.	.3				Left renal.	.5		
	Trunk after branches.	.58				Left c. iliac.	.75		
	Trunk of left subclavian.	.95	.9025	1.0225	Right c. iliac.	.75	1.21	1.1475	
	Vertebral.	.55			Art. sac. med. and lumbar, 13, each,	.15			
	Thyroid axis.	.35			Aorta.	1.1			
	Internal mammary.	.3			Left c. iliac.	.75			
	Cervic. prof.	.25			Right c. iliac.	.75			
	Sup. intercostal.	.15			Art. sac. med.	.15			
	Trunk after branches.	.65							
	Abd. aorta above cæliac.	1.75	3.0625	3.1975	XIV. Fem. 55. Poisoning by arsenic. 40 hours p.m.	Aorta before the great branches.	2.4	5.76	5.1775
	Cæliac.	.65			Innominate.	.95			
	Sup. mesenteric.	.7			Left carotid.	.7			
	Left renal.	.55			Left subclavian.	.85			
	Right renal.	.6			Cont. trunk an inch from the left subclavian.	1.75			
	Inf. mesenteric.	.4							
Lumbar, &c. ten, each.	.15	Aorta as above.			2.4	5.76	5.9175		
Aorta above bifurcation.	1.2	Innominate, left carotid, and subclavian, as above.							
Aorta above bifurcation.	1.2	Continued trunk directly after the left subclavian.	1.95						
Sacr. med.	.2								
	Right iliac.	.85	.7225	.7165	Aorta above the cæliac.	1.65	2.7225	3.949	
	External iliac.	.66			Cæliac.	.55			
	Internal iliac.	.52			Sup. mesenteric.	.6			
		Right iliac.	.85	.7225	.6826	Right renal.	.5		
		External iliac.	.65			Left renal.	.5		
		Internal iliac.	.51			Inf. mesenteric.	.33		
		Left iliac.	.85	.7225	.6826	Cont. trunk.	1.25		
		External iliac.	.65			Small branches, ten, each,	.15		
		Internal iliac.	.51						

Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.
XIV. Con- tinued.	Aorta above the iliac.	1.25	1.5625	1.225	XV. Con- tinued.	Right external iliac below epi- gastric.	.93	.8649	.8650
	Right c. iliac.	.75				Superf. femoral.	.75		
	Left c. iliac.	.8				Profunda.	.55		
	Art. sacr. med.	.15							
	Right c. iliac.	.75	.5625	.5389	XVI. F. 30-40. Pericar- ditis; phthisis. 70 hours p.m.	Right com. carot.	.75	.5625	.5329
	External iliac.	.58				Internal carotid.	.48		
	Internal iliac.	.45				External carotid.	.55		
	Left c. iliac.	.8	.64						
	External iliac.	.6		.5904	XVII. M. 50-60. Strangu- lated hernia. 60 hours p.m.	Aorta above the branches.	2.15	4.6225	5.6125
	Internal iliac.	.48				Aorta below duc- tus arteriosus.	1.8		
	Innominate.	.95	.9025	1.		Innominate.	1.		
	Right subclavian.	.8				Left carotid.	.75		
XV. Male, 50. Dia. liver; hypertr. and dila- tation of the heart; general dropsy. 70 hours p.m.	Right carotid.	.6	.36		XVII. M. 50-60. Strangu- lated hernia. 60 hours p.m.	Left subclavian.	.9		4.1108
	Right c. carotid.	.6	.36			Aorta above cæl.	1.93	3.7249	
	Internal carotid an inch from origin.	.4		.3764		Cæliac axis.	.65		
	External carotid.	.42				Sup. mesenteric.	.7		
	Sup. laryngeal.	.2				Right renal.	.52		2.1125
	Left c. carotid.	.6	.36			Left Renal.	.55		
	Internal carotid	.4				Inf. mesenteric.	.3		
	External carotid.	.45		.4025		Small art., ten, each.	.15		
	Sup. laryngeal.	.2				Aorta before bi- furcation.	1.52		1.0324
XV. Male, 50. Dia. liver; hypertr. and dila- tation of the heart; general dropsy. 70 hours p.m.	Abdominal aorta.	2.	4.			Abdominal aorta.	1.52	2.3104	2.1125
	Cæliac.	.7				Right com. iliac.	1.1		
	Sup. mesenteric.	.7				Left com. iliac.	.95		
	Left renal.	.55				Right com. iliac.	1.1	1.21	1.0324
	Right renal.	.6		4.6039		External iliac.	.82		
	Inf. mesenteric.	.42				Internal iliac.	.6		
	Small branches, ten, each.	.15				Left com. iliac.	1.05	1.1025	1.1849
	Cont. trunk.	1.6				External iliac.	.85		
	Aorta just before the division.	1.6	2.56			Internal iliac.	.68		
	Right com. iliac.	1.1				Aorta before the branches.	2.75	7.5625	7.5735
XV. Male, 50. Dia. liver; hypertr. and dila- tation of the heart; general dropsy. 70 hours p.m.	Left com. iliac.	1.1		2.4425		Aorta after duct. arteriosus.	2.15		
	Art. sacr. med.	.15				Innominate.	1.2		
	Left c. iliac.	1.1	1.21			Left carotid.	.78		
	External iliac.	.73		.9554		Left subclavian.	.95		
	Internal iliac.	.65				Right external iliac.	.83	.6889	.6994
						Femoral.	.63		
	Right c. iliac.	1.1	1.21			Profunda.	.55		
	External iliac.	.8		1.0625					
	Internal iliac.	.65							

Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.
XVIII. Male, 40. Pneu- monia. 24 hours p.m.	Innominate.	1.25	1.5625	1.8625	XIX. Con- tinued.	Abdominal aorta.	1.68	2.8224	3.257
	Right subclavian.	1.2				Celiac.	.65		
	Right carotid.	.65				Sup. mesenteric.	.68		
	Aorta above the caeliac.	1.85	3.4225	Left renal.		.5			
	Celiac.	.55		Right renal.		.5			
	Sup. mesenteric.	.78		Inf. mesenteric.		.36			
	Left renal.	.65	4.6069	Small branches, eight, each,		.15			
	Right renal.	.6		Cont. trunk.		1.25			
	Inf. mesenteric.	.35							
	Small arteries, ten, each,	.15							
Cont. trunk.	1.6								
Aorta before be- furcation.	1.6	2.56	2.335	Aorta before bi- furcation.	1.25	1.5625	1.555		
Right com. iliac.	1.1			Right com. iliac.	.85				
Left com. iliac.	1.05			Left com. iliac.	.9				
Art. sac. med.	.15			Art. sac. med.	.15				
Right com. iliac.	1.1	1.21	.9225	Left com. iliac.	.9	.81	.6929		
External iliac.	.75			External iliac.	.65				
Internal iliac.	.6			Internal iliac.	.52				
Left com. iliac.	1.05	1.1025	.9448	Right com. iliac.	.85	.7225	.6725		
External iliac.	.78			External iliac.	.65				
Internal iliac.	.58			Internal iliac.	.5				
Right external iliac.	.82	.6724	1.0177	Left extern. iliac.	.73	.5329	.6469		
Branches, I.	.4			Femoral.	.63				
„ II.	.48			Profunda.	.4				
„ III.	.48			Ext. circumflex.	.3				
Femoral.	.63			Right external iliac.	.72	.5084	.625		
Left extern. iliac.	.85	.7225	Femoral.	.6					
Femoral.	.63	.7333	Profunda.	.45					
Profunda.	.58		Ext. circumflex.	.25					
			Aorta before branches.	2.6	6.76	6.7825			
		Innominate.	1.15						
		Left carotid.	.8						
		Subclavian.	1.1						
		Cont. trunk.	1.9						
XIX. Male, 35. Fever. 60 hours p.m.	Innominate.	1.12	1.2544	1.465	XX. Fem. 36. Chronic pneu- monia; aneurism of aorta. 40 hours p.m.	Aorta before be- furcation.	1.45	2.1025	1.5377
	Right subclavian.	.95				Right com. iliac.	.83		
	Right carotid.	.75				Left com. iliac.	.85		
	Common carotid.	.75	.5625	.5429		Art. sac. med.	.15		.725
	Internal, after dilatation.	.5				Left com. iliac.	.85	.7225	
	External.	.48				External iliac.	.65		
Sup. laryngeal.	.25			Internal iliac.	.55		.7569		
				Right com. iliac.	.83	6.889			
				External iliac.	.63				
				Internal iliac.	.6				



Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	Age, Sex, Disease, &c.	Arteries measured.	Circumference of each.	Square of Circum- ference of Trunk.	Sum of Squares of Circumferences of Branches.	
XXI. Male, 19. Fever. 50 hours p.m.	Aorta.	2·	4·		XXI. Con- tinued.	Abd. aorta.	1·36	1·8496		
	Innominata.	1·05		4·3375		Cæliac.	·55		2·2174	
	Left carotid.	·65				Sup. mesenteric.	·6			
	Left subclavian.	·75				Left renal.	·45			
	Cont. trunk.	1·5				Right renal.	·5			
						Inf. mesenteric.	·32			
	Innominata.	1·05	1·1025			Cont. trunk.	1·			
	Right carotid.	·73		1·2053						
	Right subclavian.	·82								
	Left com. carotid.	·63	·3969				Aorta.	1·	1·	
	External carotid.	·45		·405		Left com. iliac.	·62		·8069	
	Internal carotid.	·45				Right com. iliac.	·65			
				Left com. iliac.	·62	·3844				
Right subclavian.	·82	·6724		External iliac.	·55		·4625			
Branches, I.	·4			Internal iliac.	·4					
"    II.	·18		·5928							
"    III.	·2			Right com. iliac.	·65	·4225				
"    IV.	·3			External iliac.	·57		·5098			
Cont. trunk.	·52			Internal iliac.	·43					

The general facts deducible from the preceding tables may be thus stated;—

I. The area of a transverse section of the trunk of the aorta just after it issues from the pericardium is to the sum of the areas of the transverse sections of the three great branches, and of the distal part of the arch, as 5·8289 : 6·1535 ; in other words, the arterial stream, in passing from the beginning to the end of the arch of the aorta, and into the main trunks arising from it, grows wider in the proportion of 1 to 1·055.

This is the average result of twelve measurements, two being omitted on account of a great deviation of size from disease. But there is more uncertainty about the amount (though not about the existence) of this enlargement than about most of the other proportions, on account of the rapid enlargement of the aorta between its origin and the innominata, and the equally rapid contraction in the inch following the left subclavian ; so that, for exactness, all the measurements ought to have been made at precisely corresponding points of the arch.

II. When the innominata divides, there is a further widening of the

stream. The area of the trunk is to the joint areas of the branches, on an average of four closely accordant measurements, as 1 : 1·147.

III. The internal carotid is much larger at its commencement than in its further course ; its first half inch being almost funnel-shaped. All the measurements were, therefore, made in the part where it is nearly cylindrical ; and from these it results that the area of a transverse section of the common carotid is to the joint areas of sections of its branches, on an average of nine measurements made indiscriminately on the right and left sides, as 1 : 1·013. In this proportion, therefore, the stream continues to grow wider in branching.

IV. From the only two cases in which a fair comparison could be instituted between the external carotid and its branches, it resulted that the area of a section of the former is to the joint areas of sections of the latter, as 1 : 1·19.

V. In like manner, from three measurements, it resulted that the arterial stream, in passing along the trunk of the subclavian artery, and in branching from it, enlarges at the rate of from

1 : 1·055. But with so few measurements, and those not closely accordant, these results cannot pretend to exactness.

On the whole, however, it may be certainly deduced, that the arterial stream becomes regularly larger as it proceeds towards the main branches of the head and upper extremities, and that in a proportion equal to about 100 : 108.

VI. In the branches and in the lower part of the trunk of the abdominal aorta, a considerable increase of the stream might be expected. From ten measurements, all of which found such an increase, it results that the average enlargement of the stream in passing along the abdominal aorta, and into all its branches, before it divides into the iliac arteries, is in the proportion of 1 : 1·183.

VII. But when the aorta divides, the stream is almost invariably contracted. There was but one exception in seventeen instances, and in that (No. 12) it may be seen that the contraction took place at the division of the common into the external and internal iliac arteries; and, in general, when measurements of both were made, a small decrease in the common iliacs was compensated by a great decrease in their branches. Taking all together, the average diminution of the stream at this division is as 1 : ·893.

VIII. When the common iliac arteries divide, there seems to be less regularity in the alteration of the size of the stream than in any of the divisions that were examined. In twenty-eight measurements, fourteen shewed a slight increase, fourteen a slight decrease, but, on the average, there was a decrease in the proportion of 1 : ·982; so that the rule of a contraction of the current in passing to the lower extremities was corroborated.

IX. At the branches of the external iliac there is, on the whole, an enlargement of the stream in the proportion of 1 : 1·15; but the variations are not constant; and when the branches arise in a cluster from the trunk, the enlargement is very great; a rule which is repeated in several other instances.

The following table shews all these results at one view :—

*Ratio of the area of each arterial trunk to the joint area of its branches, or of its branches and continuation :—*

	Trunk.	Branches.
Arch of the aorta . . .	1	: 1·055
Innominate . . .	1	: 1·147
Common carotid . . .	1	: 1·013
External carotid . . .	1	: 1·19
Subclavian . . .	1	: 1·055
Abdominal aorta to the last lumbar arteries . . .	1	: 1·183
Abdominal aorta just before dividing . . .	1	: ·893
Common iliac . . .	1	: ·982
External iliac . . .	1	: 1·15

From the whole it follows that the old rule of the enlargement of the arterial canal, as trunks divide into branches, is true for the majority of cases : though the enlargement is less than has been generally supposed. But there is a constant exception to the rule where the aorta divides into the common iliac arteries; for there, or at the division next lower down, the stream is always contracted.

The perfection with which, in every case that can be understood, the minutest arrangements of the body are each adapted to a purpose, permits no doubt that these relations of size in the several parts of the arterial canal serve some particular ends. The measurements now published are too few to be the foundation of many conclusions; but to those who have time and taste for such tedious investigations the prosecution of the inquiry is full of promise, and success will be the certain reward of labour.

One of the results already obtained, the constant contraction of the stream as it enters the branches going to the lower extremities, deserves particular notice. The effect of such an arrangement must be to increase the velocity of the current, not only in the iliac arteries themselves, but in the arteries given off from the trunk above them, such as the mesenteric and renal; and it is, surely, not improbable that the acceleration of the circulation through the kidneys, and through the organs from which the roots of the portal vein are derived, is the special purpose which so singular an arrangement serves.

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distinguished physiologist necessarily carries with it great weight, I thought this a subject meriting investigation, as well on this account as from its close connexion with the source of the phenomena of disease, and have accordingly submitted it to the test of experiment.

The question, then, to determine, was the effect that arrest of the coronary circulation would have upon the action of the heart. In order to answer this, I performed the following experiments.

EXPERIMENT 1st. — A moderately large dog, about two years of age, was pithed; artificial respiration was then set up by an assistant, the thorax opened, and the heart exposed as rapidly as possible. It was acting forcibly and pretty regularly from 90 to 100 beats per minute. Fine silk ligatures were then introduced under the coronary arteries, as close as possible to their origins, by means of one of Liston's small nævus needles (a curved needle with an eye near the point fixed in a handle), as it was found impracticable to tie the vessels in the usual way, whilst the heart was acting strongly. The ligatures were then tied, about six minutes after the death of the animal, the heart covered up by means of a portion of the walls of the thorax that had been removed, and artificial respiration continued. At twelve minutes after the ligature of the vessels (eighteen after the death of the animal) the heart was beating from 36 to 40 per minute. At seventeen minutes it had fallen to 28–30. At twenty-one minutes the action of the ventricles had ceased, with the exception of a slight tremulous motion. The auricles still acted, and continued to do so for some time longer; the precise period was, however, not noted, as it was unimportant to the result of the experiment.

EXPERIMENT 2d.—The coronary vessels were ligatured in another dog, in the same way as in the last; artificial respiration being kept up. All ventricular action ceased in three minutes after the vessels were tied; about nine minutes after the death of the animal. The auricles continued acting.

These experiments were repeated on five rabbits of from eight to ten weeks of age, with the following results:—

EXPERIMENT 3d. — Coronary vessels

pathological bearings.

Dr. Marshall Hall, in his very excellent Gulstonian lectures for the present year, "On the Mutual Relations between Anatomy, Physiology, Pathology, and Therapeutics," in speaking of the causes of sudden death, attributes it, in many instances, to an interruption of the coronary circulation. He thinks that ossification of the coronary arteries, a fatty condition of the heart, a contracted aortal, or deficient mitral valve, may, by interrupting the flow of blood through the coronary vessels, give rise to syncope or sudden dissolution, according as this is more or less imperfectly impeded, and that, when entirely arrested, the heart, being suddenly paralyzed, may have its action stopped for ever. As any opinion emanating from this

\* Read at the British Association for the Advancement of Science, June 24th, 1842.

ligatured five minutes after the death of the animal; ventricles contracting strongly from 120 to 130 per minute. Seven minutes after the ligatures were applied it had fallen to 60—64; in thirteen minutes to 34—38; in eighteen minutes to 30—32, acting very feebly and languidly; the auricles, however, beating from 54 to 60.

At the twenty-fourth minute ventricular action ceased, with the exception of a tremulous motion.

EXP. 4th. — Coronary vessels tied about six minutes after the animal's death. Heart acting very tumultuously, nearly 200 per minute. In ten minutes it had fallen to 64—68; in sixteen minutes to 36—40; in nineteen minutes to 28—32; and, becoming gradually slower and more feeble in its action, it ceased at the twenty-second minute.

EXPERIMENT 5th. — Vessels ligatured seven minutes after the death of the animal; ventricular action rather feeble, from 70 to 80 per minute. In twelve minutes it had fallen to 30—34; in seventeen minutes to 20—28, acting very irregularly, and ceased at the 21st minute from the time that the ligatures were applied. Auricles still acting.

EXPERIMENT 6th. — Vessels ligatured six minutes after the death of the animal; action of heart tumultuous, and impulse rather forcible. Five minutes after ligature, ventricles contracted, 120 per minute; ten minutes 64; fifteen minutes 49; nineteen minutes 42—46; twenty-four minutes 34—36; twenty-seven minutes, about 24. and very feebly. At the thirty-first minute ventricular action ceased.

EXPERIMENT 7th. — Vessels ligatured five and a half minutes after the death of the animal. The heart's action becoming gradually weaker, ceased in twenty-two minutes.

It will thus be seen that, if we except the 2d Experiment, (into which, I should imagine, some source of fallacy must have crept, from its discrepancy with the others,) the average duration of the ventricular action, after the ligature of the coronary vessels, was twenty-three minutes and a half; and, after the death of the animal, about thirty-two minutes and forty seconds. Now, in an animal that is pithed, but whose heart is left intact, artificial respiration will easily keep up the action of that

organ for an hour, or an hour and a half. Brodie, indeed, states that he has seen it act, in a dog that was beheaded, after tying the cervical vessels, for two hours and a half, at which time there were thirty-five pulsations in a minute. It follows, therefore, that if the heart's action can only be maintained for twenty or thirty minutes after the coronary vessels have been ligatured, its contractility must be very greatly impaired by the arrest of the circulation of the blood through its muscular fibre, although its action is not suddenly stopped; which, indeed, we should not expect to be the case, inasmuch as we find this organ acting for some time after removal from the body, when it is obvious that no blood can circulate through its parietes, and also in some instances in which the access of that fluid to the left side is prevented by its being arrested in its passage through the lungs: the muscular power being in all probability maintained, whilst the small quantity of blood contained in its tissue becomes quite effete.

There is, however, one source of error to be guarded against in the experiments that have been detailed, and by which the action of the heart may very probably be maintained for a greater length of time than it otherwise would. It is this. On applying a ligature round so small a vessel as the coronary artery in the dog or rabbit, it is impossible, in most cases, to avoid including the accompanying vein, and thus to produce a degree of congestion of the tissue of the heart, or, at all events, to prevent its being emptied of the contained blood. Now Dr. Kay\* has fully and satisfactorily proved that the contractile power of muscles (both voluntary and involuntary) is supported through a comparatively longer period, when their fibres are congested even with venous blood, than when emptied of that fluid. An artery, when it is tied, gradually contracts below the point that is ligatured, and thus forces out the contained blood, which finds its way back through the corresponding veins to the centre of the circulation. If, however, the vein be included in the ligature, the part below the ligatured point must necessarily be prevented from emptying itself of blood, and thus a degree of sanguineous distension of

\* Treatise on Asphyxia, pp. 145, et seq.

the limb or organ is produced and maintained. This, then, being the case, it follows that, as the length of time the contractility of a muscle persists after the ligature of its vessels, depends upon the degree of its congestion, as this is greater, its power of action must be correspondingly maintained for a longer period, and will (as Dr. Kay\* has also proved) rapidly cease, if the veins be emptied of their contents. In order, then, to do away with the source of fallacy that would arise from the muscular tissue of the heart being allowed to remain in a congestive state, from the return of blood through the coronary veins being prevented, I performed the following experiment.

A rabbit, about two months old, was pithed: artificial respiration was immediately set up, the thorax opened, and the coronary vessels ligatured within six minutes of the death of the animal. Eight minutes after the vessels had been tied the ventricles were contracting 68 times per minute. The coronary veins (which, as in the former case, were included in the ligatures,) being much distended, were punctured in several places with a fine sharp lancet, so as to cause them to discharge their contained blood. Four minutes after this, twelve after the ligature of the vessels, and eighteen after the death of the animal, all regular action of the ventricles had ceased, a slight tremulous motion alone continuing. The auricles acted for some time longer.

Now the average time during which ventricular action was found to continue in the other experiments was twenty-three minutes and a half; but in this case it was only maintained for twelve minutes, ceasing four minutes after the veins were punctured. This difference can only be owing to the comparative absence of blood in the muscular fibres of the heart, which was, in the latter instance, emptied of that fluid, whilst in the former ones it was kept, by the ligature of the veins, in a state of congestion; for in every other particular the condition of the heart was the same in the two experiments.

As the arrest of the circulation through the parietes of the heart causes the contraction of this organ to cease sooner than they otherwise would, we

should expect that if we could reverse this condition, and by any means increase the activity of the coronary circulation, they would be maintained for a comparatively longer period. With this view I accordingly performed the following experiment.

A rabbit, two months old, was pithed; artificial respiration was then set up, but only continued about ten minutes. The thorax was opened as soon as possible after the death of the animal, and the aorta tied immediately after leaving the heart, and before giving off any large branch. The pulmonary artery and veins, and the venæ cavæ, were left untouched. The left side became almost immediately enormously distended with blood, and very tense, the ventricle assuming a rounded appearance, and being separated by a kind of sulcus from the right ventricle. Impulse on the heart was very strong, more so than natural, and its pulsations numerous; ten minutes after the ligature was applied they amounted to about eighty in a minute.

27th minute.—Action of left ventricle, although still continuing, is somewhat imperfect. The right one and the auricles contract strongly: coronary vessels much distended.

40th minute.—Ventricles contract from 40 to 50 times per minute; action of the left one very laboured. The auricles, especially the left one, act much more rapidly.

55th minute.—Left ventricle ceased acting; the right one still contracts, but more feebly.

65th minute.—Right auricle ceased acting.

73d minute.—Left auricle ceased, but right ventricle continued to contract partially, especially near the apex, about twenty times per minute.

82d minute.—Right ventricle ceased acting.

On opening the heart the left side was found distended with blood, whilst the right lung contained enough to moisten its parietes.

Now the artificial respiration, which was only continued for a short period, could have scarcely any influence in maintaining the heart's action in this case, the circulation being, with the exception of the very small quantity of blood that might be sent through the substance of the heart, entirely arrested

\* Op. cit. p. 150: Experiment 12.



by the ligature of the aorta. We must, therefore, compare the result of this experiment with the length of time the heart would act, were artificial respiration not kept up, which is seldom, in warm-blooded animals, more than from twenty to thirty minutes; whereas, in this instance, the right ventricle continued acting an hour and twenty-two minutes; and the left would probably have contracted for as long a time had it not been arrested by the overdistended state in which it was, preventing its muscular fibres from contracting upon its contents. This difference appears to me to be only explicable on the supposition that the increased quantity of blood that must have been sent into the muscular substance of the heart served to maintain its power of action for a comparatively longer period. For, as the aorta was ligatured before any of its larger branches were given off, immediately beyond the origin of the coronary arteries, the whole force of the contractions of the left ventricle was expended in driving as much of the blood that it received (for the pulmonary circulation was left untouched) into the coronary arteries as those vessels could possibly contain.

There is another interesting circumstance connected with this experiment, which it may be as well to allude to; namely, the alteration of the order of cessation of action in the different cavities of the heart. Haller, Nysten, and many others, have found that, in common death, the right auricle and ventricle always contract longer than the corresponding systemic cavities; and the auricle, the *ultimum moriens*, longer than the ventricle. Haller has, however, shewn that this order of cessation of contraction might be reversed by emptying the right side of the heart, and maintaining the left in a state of distension. The experiment just detailed confirms in some measure Haller's observation, as it may be seen that, in it, the cessation of the order of contraction in the different cavities of the heart was as follows: 1st, left ventricle; 2d, right auricle; 3d, left auricle; 4th, right ventricle. There can be little doubt that the comparatively early cessation of action in the left ventricle was owing to the excessively distended state of that cavity (which was so great as to

cause it to assume a rounded appearance), it being well known that excessive distension prevents the contraction of hollow muscles; as is the case with the bladder, for example, in retention of urine. The remaining three cavities ceased to act in the same order that they would probably receive blood from the coronary arteries; the right ventricle continuing its contractions longer, as its supply from these vessels appears to be more free and direct than that of the auricles.

From these experiments, then, we are warranted in concluding:—

First, that arrest of the coronary circulation produces a speedy cessation of the heart's action.

Secondly, that an increase in the quantity of blood sent into, or retained in the muscular fibre of the heart, produces a corresponding increase in the activity of that organ.

The bearing of these results on the immediate cause of death in some diseases of the heart is sufficiently obvious. Any circumstance that may interfere with the passage of the blood through the coronary arteries, either directly, as in ossification of the coats of those vessels, or indirectly, by there not being sufficient blood sent out of the left ventricle, as in cases of extreme obstruction or regurgitant disease of the aortal or mitral valves, may occasion the fatal event.

## OPERATION ON THE JAW

WHILE UNDER THE INFLUENCE OF  
MESMERIC SLEEP.

*To the Editor of the Medical Gazette.*

SIR,  
MRS. GREGORY, servant to Captain Valiant, 40th regiment, for a long time suffering from decayed teeth, which caused much constitutional irritation, applied to me early in May, complaining of headache and pain in the upper jaw of a most excruciating kind. On examination the gums were found ulcerated; the alveolar processes carious on the right side, and presenting numerous spiculæ of bone projecting through the gums, which were exquisitely painful on the slightest pressure with the finger. Filing off the spiculæ

of bone was advised and consented to: the performance of the operation having been proposed while she was under the influence of mesmeric sleep, was undertaken on the 25th May, in the presence of Sir T. Wilshire and Captain Valiant. Sleep was speedily induced by Sir Thomas, and she was pronounced to be in a fit state to bear the operation in half an hour.

An incision was then made on either side of the alveolar processes, extending from the incisor to the molar teeth, dividing the gums, which were turned back so as to expose the diseased bone. The spiculæ being then considered the principal source of annoyance, were filed off smooth with the jaw, the gums approximated, and creosote applied to the carious parts. The filing occupied fully five minutes: the patient, however, to my great astonishment, evinced not the slightest feeling from the operation, but continued in the enjoyment of undisturbed repose for one hour, at the expiration of which time she was awoke by Sir Thomas, and seemed like one aroused from a dream. Some minutes, however, elapsed before perfect consciousness returned, when she expressed herself incredulous that any operation had been performed on her jaw, being quite free from all pain.

The phenomena evinced could only be elicited by Sir Thomas Wilshire, who so kindly afforded his services to the poor woman. They appeared completely under his own control. By his request her mouth opened to admit my instruments, which she did not feel; his taking wine and cake produced in her corresponding actions, and sensations of mastication and deglutition. The pulse rose to 120. Some excitement and spasmodic action supervened on Sir Thomas withdrawing himself from her for a little; but his approach and contact soon quieted the patient, and eventually restored her to perfect composure during the slumber.

I am, sir,  
Your obedient Servant,  
J. T. CHARLTON, M.D.  
Assistant Surgeon, R.N.

Melville Hospital, Chatham,  
June 10th, 1842.

## MEDICAL GAZETTE.

Friday, July 8, 1842.

"Licet omnibus, licet etiam mihi, dignitatem  
*Artis Medicæ* tueri; potestas modo veniendi in  
publicum sit, dicendi periculum non recuso."

CICERO.

### CURE OF DISEASES BY COLD WATER.

It was a maxim, we believe, of Bentham, that all evidence should be admitted in a court of justice; and while the English law sternly rejects many classes of witnesses, he was willing to receive even the worst, leaving the estimation of their credibility to the court and the jury.

This tolerance is praiseworthy; and if necessary in cases where good evidence also is to be procured, is scarcely less so in those instances in which unprejudiced testimony is not to be had, and where we must content ourselves with information from a doubtful source; like the traveller in a wilderness, who is compelled by hard necessity to slake his thirst at a muddy fountain.

Indeed, even under a more exclusive system, the witness is listened to, who perhaps has no direct interest at issue, but who shows by the warmth and colouring of his evidence that he can see truth only on one side of the question.

Acting on these lenient maxims, we gave some account, a few weeks ago, of the details of "hydropathy" as set forth by Mr. Claridge; and with the same desire of information, or, if our reader will, with the same excessive liberality, we have looked through the work of Mr. James Wilson on the same subject\*.

\* The Water Cure: a practical treatise on the cure of diseases by water, air, exercise, and diet: being a new mode of restoring injured constitutions to robust health, for the radical cure of dyspeptic, nervous, and liver complaints, the douloureux, gout and rheumatism, scrofula, syphilis, and their consequences, diseases peculiar to

We are ready to confess that with less liberal, we might almost say less latitudinarian judges than ourselves, Mr. Wilson's very title-page would have put him out of court; and the extravagant praises lavished by both writers on their favourite system will do any thing but impress the judicious with a belief of their discrimination.

In that passage in the *Citizen of the World*, to which we alluded in our last article on this subject, Goldsmith wonders at the singularity of those who refuse a cure when absolutely pressed upon them. "Sure there must be something strangely obstinate in an English patient, who refuses so much health on such easy terms: does he take a pride in being bloated with a dropsy? Does he find pleasure in the alternations of an intermittent fever? Or feel as much satisfaction in nursing up his gout, as he found in acquiring it? He must, otherwise he never would reject such repeated assurances of instant relief. What can be more convincing than the manner in which the sick are invited to be well? The doctor first begs the most earnest attention of the public to what he is going to propose; he solemnly affirms the pill was never found to want success; he produces a list of those who have been rescued from the grave by taking it. Yet, notwithstanding all this, there are many here who now and then think proper to be sick. Only sick, did I say? There are some who even think proper to die! Yes, by the head of Confucius! they die; though they might have purchased the health-restoring specific for half-a-crown at every corner."

The same neglect of infallible remedies continues in the present age; and it would seem that people die, not from

the imperfection of all human frames, and all human remedies—not because organic diseases are excited with ease, and subdued with difficulty—but because they have neglected the water treatment, or not used it long enough.

Each water-doctor assures us, like Sangrado in *Gil Blas*, "*que l'eau buë en abondance pouvoit passer pour le véritable spécifique contre toutes sortes de maladies.*"

But let us turn from these general considerations to the special hydropathist before us. Mr. James Wilson, after wandering about for some years in search of health, moralizing his weary way, he says, "like another Jaques," found the object of his search at Gräfenberg. But long before Gräfenberg had been heard of in England, Mr. Wilson knew how to use water. Twelve years ago, in our largest shipping town, he heard a man in large practice order a stimulating liniment for the throat of a patient suffering from scarlet fever. On this Mr. Wilson took the liberty of observing, "that having from fifty to sixty patients a day to visit, many of them in scarlet fever, poor people placed under the most unfavourable circumstances, I was yet fortunately enabled, by warm fomentations continually applied to the throat and abdomen, by giving *no medicines*, except *innocent deceptive ones* to please the patient, and abundant drink of toast and water, to avoid losing a single case."

Strange to say, however, the eminent practitioner in the great haven, or "grave seignior," as Mr. Wilson calls him, like the public in Goldsmith's time, had no relish for an infallible cure; and following his unhappy example, patients have since continued to die of scarlet-fever, as we learn from the Bills of Mortality.

Mr. Wilson's account of the mode of

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women and children, fevers, inflammations, &c. By James Wilson, Physician to his Serene Highness Prince Nassau, &c. London, 1842.

treatment at Gräfenberg pretty much resembles Mr. Claridge's. Bathing, sweating, the douche, drinking cold water, exercise, and abstinence from stimulating beverages, are the chief points of the treatment.

The "shallow bath" contains from six inches to a foot of water, and the patient is so placed that both his feet and hips are immersed. This bath is employed in fever and inflammation, the temperature being varied according to circumstances. In the hip or *sitz* bath, the water reaches to the umbilicus; and in the beginning of the treatment of chronic diseases its temperature is raised from 60° to 80° of Fahrenheit.

The cold hip-bath has been used by Priessnitz to arrest labour pains. The sweating process is now omitted by Priessnitz in numerous cases, and this reformation will probably be carried farther; while his imitators, says Mr. Wilson, still make the mistakes which he has corrected for the last three or four years. The perspiration is sometimes brown or yellow, and of a fetid and even sulphureous smell.

As the wrapping in a wet sheet forms a conspicuous part of the treatment, the question naturally arises, why a wet sheet should be more harmless than the dreaded damp sheets of a bad inn. Mr. Wilson has not cleared up this difficulty, which may be solved as follows. In nineteen cases out of twenty the damp sheets of the hostelry do no harm, being dried by the healthy body placed between them. In the twentieth the traveller awakes with the rheumatism, his feebler frame having been unable to react against the depressing power of the moistened sheets. Had such a patient been subjected to the process at a water-establishment, the superintendent would have raised the temperature of the water on perceiving his delicacy, or

would have restored the functions of his skin by friction. The damp sheets at the King's Head are a piece of unwatched hydropathy. Heberden, indeed, supposed the fear of damp sheets to be a vulgar prejudice; the escape of the majority blinded him to the sufferings of the minority; but there is no doubt that the wet sheet of the hydropathist, and the damp ones of our inns, equally require a certain caution. It is possible also that the difference between the waking and sleeping state ought to be admitted as an element in the calculation.

The usual quantity of spring water swallowed by Mr. Wilson was twelve or fifteen half-pint tumblers in the course of the day; but once, by way of experiment, he took thirty tumblers before breakfast (from 6 to 9, A.M.) The stomach absorbed the water so rapidly, that, far from feeling distended by so enormous an imbibition, the wet bandage, which was tightly fitted to his stomach on setting out, had become more lax at the end of his drinking bout. The smaller quantity is the most general dose, and a patient unaccustomed to drink water, and with a stomach out of order, ought to begin more moderately still.

It is but fair to Mr. Wilson to remark that his enthusiasm for Vincent Priessnitz has not blinded him to some defects in his system. Thus he censures the use of indigestible substances at the Gräfenberg table, "such as pork baked to a cinder, sausages, sour-kraut, salted cucumbers, and bad pastry." Again, though Priessnitz observes the skin with accuracy, and draws valuable deductions from his examination, he neglects the pulse and tongue, not understanding the indications to be derived from them.

Nor does our author approve of Priessnitz's prohibition of flannel, who wears wash leather instead. He justly con-

siders the rejected far better than the accepted. The most striking effects of the Gräfenberg system have been witnessed by Mr. Wilson in bed-ridden patients, and others who were confined to their rooms. Gout is generally treated by sweating, followed by the cold bath, the hip bath, foot bath, and douche; with warm fomentations to the affected parts. When the constitution is feeble, the wet sheet is used alternately with the sudorific treatment, or without it. Gout and rheumatism were among the first diseases that Priessnitz treated in great numbers, and in which he was most successful. When the ardour of indiscriminate admiration has subsided, it will probably be found that these are among the cases in which the water-cure will be a permanent addition to therapeutics. Those who prefer criticism to eulogy will turn from the books of professed partisans to the excellent report of Licentiate Blich, of Christiana, in our number of June 10th.

Mr. Wilson's book, being written by a practitioner of physic, is better than Mr. Claridge's; yet it is addressed to the public, and bears too evident marks of its destination. Let us hope that some calm and impartial physician may be induced to study the Gräfenberg system, and may record his observations in a durable volume. Till then we must apply to the prose of the hydropathists what was said of verses in ancient days:

*"Nulla placere diu nec vivere carmina possunt,  
Quæ scribuntur aquæ potoribus."*

## MEETING AT THE COLLEGE OF SURGEONS.

### LECTURE ON FOSSIL REMAINS.

THE second evening-meeting was held, at the College of Surgeons, on Wednesday, and was attended as numerous as on the preceding occasion. Besides members, there were several of the nobility present, and a great many other visitors.

Professor Owen gave a lecture, in which he continued the subject of the fossil remains of extinct animals found in different strata of the soil of this country. Having, in the former lecture, considered the skeletons of certain Mammalia which had been lately discovered, and which are found in the tertiary strata, he now described the fossil bones of the different species of Reptilia which chiefly occupy the upper secondary strata. He commenced by describing those of the crocodiles; the parts of no less than six species of that class having been discovered in this country, which bear a more or less close resemblance to the skeletons of the existing crocodiles: showing that those animals, now inhabiting only a limited space of the earth's surface, were at a previous period more widely disseminated, and of greater variety in their structure. The fossil remains, moreover, prove that the crocodiles form a class more distinct from the lizards than was supposed by Cuvier and other comparative anatomists. There are specimens of carnivorous animals, as the megosaurus, distinguished by its sharp conical tooth, with a serrated edge, and strongly constructed lower jaw; and also of graminivorous glubra, as the Iguanodon, with a flattened irregular tooth, having deposits of enamel and proper dental substance on opposite sides, the resemblance of which to the tooth of the Iguana was first pointed out by Dr. Mantell. The skeletons of the two latter present some remarkable conformations, having five vertebræ locked together, and modified, instead of three, the ordinary number in the salurian class, corresponding with the largely-developed cylindrical bones which compose the hinder extremities, and which present an approximation to a medullary cavity in their interior. Several of these extinct species of animals attained a size many times larger than any of the existing representatives of the class, and almost exceeded the bounds of credibility. The length of the Iguanodon, which may be estimated with tolerable certainty from one or two of its vertebræ, on account of the known uniformity in the number and length which these bones maintain in reptiles, was about thirty feet. The lizards now existing in this country are of very diminutive size; whereas in the chalk there have been found



evident fossil remains of much larger animals of this class. Of Chelonian reptiles the specimens of no less than six species have been discovered in the London clay, and many are found in other strata in different parts of England. There are also remains of the skeletons of serpents in the secondary strata of this country, which must have appertained to animals at least as large as are to be found at this time in any part of the world. The present representatives of the Batrachian class in England are known to be small; and greater difficulty has attended the geological investigation of this than of any other division of reptiles. The fossil specimens of it are situated very deep, near the bottom of the new red sandstone strata, and for a long time the only discoverable traces of them were the prints of their footsteps left upon the clay; and it was imagined that this stratum was unfavourable to the preservation of animal structure. Of late, however, various fragments of skeletons have been found, by a comparison of which with one another, as well as with a more perfect specimen discovered in the same stratum in Germany (the similarity of which had been proved by Professor Owen from a microscopical examination of the teeth, which showed a remarkable complexity of structure, unlike those of any other known animal), the existence of an enormous species of this class has been shown, which corresponds with the great size of the foot tracks before observed.

Having described, in detail, the various species of reptiles, of the former existence of which in this country there is evidence from fossil remains, some of them being destined to wade in the water, others to move on land, and some even to maintain a slow flight through the air—and having pointed out the manner in which many of them differ from the present representatives of those classes, as well as the different strata in which those fossil remains are respectively found—the Professor, in conclusion, alluded to the speculative inferences that may be drawn from them, of the state of the atmosphere at the time when, previous to the existence of man, this country was inhabited by animals of so low an order, whose inactive circulatory and respiratory system, with the greater irritability and power of endurance of their

muscular fibres, render it probable that the air in which they dwelt was less oxygenised, more highly saturated with carbon, and of greater specific gravity, than at present; these animals forming a striking contrast with the bird, whose lightness and compactness of frame, with the high development of its respiratory functions, enable it to support itself, and move far more rapidly, in a lighter atmosphere.

The lecture was on this occasion delivered in the ordinary lecture room, which was extremely crowded; and the company afterwards retired to the library, where tea and coffee were provided. The museum was lighted up as on the previous meeting, and several beautiful dissections of the nervous system of mollusca and other animals were exhibited, together with various interesting microscopical specimens, which attracted much attention.

## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

THE PRESIDENT IN THE CHAIR.

June 20, 1842.

### *A Case by* HENRY ANCELL, Esq.

THIS paper is of considerable length, and, as it consists almost entirely of the details of the case, and the post-mortem examination, it is impossible to give an abstract of it which would do justice to the author.

### *A Memoir on Tubercle of the Brain in Children.* By P. HENNIS GREEN, M.D. (Communicated by Dr. BURGESS.)

THIS memoir contains a complete history of cerebral tubercle in children, derived chiefly from thirty cases, an analysis of which the author had previously placed before the Society in a tabular form.

Having contrasted the rare occurrence of this disease in the adult, with its frequency amongst children, and shewn from the statistics of the children's hospital that it occurs once in every fifty cases of acute disease, the author first describes the seat, volume, and number of cerebral tubercle in children. He then points out the pathological appearances produced by tubercle of the brain. The symptoms of the disease are next described at considerable length. In five cases no symptom whatever occurred; in five other cases only a single symptom. The other cases are arranged under the chronic and acute stages. The chronic stage varied in duration from six weeks to two years: the acute, from a few hours to eighteen days. It is extremely difficult to group together the symptoms of this disease so as to furnish

a general description, because the symptoms are very irregular, and succeed each other at long or uncertain intervals.

The author, however, arranges the symptoms of the chronic stage of cerebral tubercle under three classes, which he describes in succession, and from which it results, that the principal symptoms are headache, partial or general convulsions, paralysis or contraction of certain muscles or limbs, change of temper, and amaurosis.

In the acute stage the symptoms are likewise very irregular; but they generally assume more or less of the characters of acute hydrocephalus, or softening of the brain.

Upon this point the author lays some stress, because it explains a great many of those cases of irregular hydrocephalus which have attracted the attention of writers.

The diagnosis of the disease is next discussed; and the author endeavours to show that the only organic disease of the brain, with which cerebral tubercle is likely to be confounded, is chronic meningitis.

The treatment, which can only be palliative, is dismissed in a few words.

*On Cysts occurring in the Neck, but not necessarily connected with the thyroid body.* By B. PHILLIPS, F.R.S. Surgeon to the St. Marylebone Infirmary.

The object of this paper is to shew that there are encysted tumors developed in the neck, commonly after the prime of life, and having no necessary connection with the thyroid body, although, in their progress, they may implicate that organ to a certain extent. These cysts are usually first seen at a certain distance from that organ; and in obtaining a history of that disease, at the time when it presents the appearance of a thyroid tumor, care must be taken to ascertain this point. The cyst is filled with a serous fluid varying in colour from straw to a dark coffee-like appearance, and coagulable by heat. It may acquire a very large size: in one of the cases which occurred to the author of the paper, it was estimated that the contents amounted to six or seven pints: but even then it is the bulk only which interferes with the functions of neighbouring organs. The fluid may be discharged by puncture, but the tumor will refill; injections are either too stimulating, and produce much disturbance, or are too irritating to modify the surface of the cyst. The plan first used by Mr. Hall, of Dumfries, of passing a thread or two through the cyst, so as to form a seton, seems to be the best mode of treatment.

The paper details several cases, and some dissections.

Mr. Dalrymple related a case which he

believed illustrated some of the points mentioned in the paper. It was that of a strong man, of about 60, who applied to his father with a large tumor in the front and right side of the neck, which, since it seemed to contain fluid and did not pulsate, was punctured, and discharged upwards of a pint of clear serous fluid. In the course of the following night blood of an arterial character broke from the puncture, and nearly a pint was rapidly discharged. It was checked with difficulty, but on the following day the hæmorrhage recurred in a still larger quantity, and it was almost concluded that an aneurism had been opened. Four days after, the wound bled again profusely: in another week, the hæmorrhage having been in the interval restrained, the man became typhoid, and in a week more he died. On examination, the arteries of the neck were found behind the tumor, and all were perfectly healthy. The tumor itself consisted of a multilocular cyst, the several divisions of which varied in size from that of a walnut to that of an orange. It was closely connected with the isthmus of the thyroid gland. The left lobe of that body was healthy, but the right was absent, its place seeming to be occupied by the cyst, which it was therefore probable had been developed in its interior. The source of the hæmorrhage seemed to be a fungoid growth attached by a narrow long pedicle to the inner surface of one of the upper cysts. From this it was probable that the blood had proceeded, either when the pressure was removed from its vessels by the evacuation of the fluid, or in consequence of their being ruptured by some accidental pressure when the puncture was made.

Mr. Stanley pointed out the difficulty of making a diagnosis between those cysts which were occasionally formed in the neck, quite independently of the thyroid gland, and those which were produced within that body, as he had no doubt that mentioned by Mr. Dalrymple was. There was sufficient evidence that both kinds of tumor occurred; and Mr. Dalrymple's case showed that the puncturing of those formed within the gland was not without danger to life. But he believed there was no sign by which to distinguish them. He related a case in which a serous coagulating fluid had been let out of a cyst in the thyroid gland, from which, having collected again, it made its escape by ulceration into the œsophagus, and destroyed life by suffocation, a part of it passing into the trachea.

Mr. Phillips said it was often possible to distinguish the cysts formed independently from the thyroid body, by the circumstance of their being first developed at some distance from it.

*A communication describing a case of Irregular Formation of the Heart, accompanied with a supernumerary valve in the pulmonary artery.* By THEOPHILUS THOMPSON, M.D.

The patient from whom the materials of this communication were obtained was an unmarried woman, aged 38. She had manifested no indication of bad health or organic disorder till her strength was impaired by an attack of cholera, and still further deteriorated by fever, after which she suffered from palpitation, and exhibited a livid complexion, with a drowsy, apathetic expression of countenance. The action of the heart was weak; the first sound more flapping, the second less distinct than natural. The weakness progressively increasing, her legs became oedematous, and subsequently erysipelatous and gangrenous, and she died with bronchial congestion, anasarca, and effusion into the peritoneum, pleura, and pericardium.

The heart was larger than natural, and exhibited a circumscribed dilatation at the part of the right ventricle more immediately connected with the pulmonary artery. The right ventricle was divided into two chambers by an imperfect septum, composed, not of a uniform fleshy wall, but of decussating and hypertrophied columnæ carneæ, some of which, separating from each other near the base of the ventricle, left an aperture of communication about an inch long and half an inch broad, and nearer the apex were a few smaller interstices among the columns: the connecting isthmus was partially covered by one of the divisions of the tricuspid valve.

The circumference of the pulmonary artery exceeded that of the aorta by nearly an inch, and was furnished with four semilunar valves of equal size, each well developed, provided with a corpus sesamoideum, and about nine-tenths of an inch in diameter.

An increased number of valves in the pulmonary artery is a very rare occurrence, and the present example is peculiar in the equality of the valves; thus furnishing an exception to the rule deduced by Meckel from the recorded instances.

The partial division of the right ventricle into two cavities affords another interesting deviation from natural development.

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This being the last evening of the season, the President announced that the Council having taken into consideration a memorial signed by 32 Fellows of the Society, praying that the President should in future be elected annually, instead of every two years, had come to the conclusion that it was not desirable to make such a change in the

laws. It was, of course, open to any Fellow to propose the measure to the Society, but the Council had decided that it should not emanate from them.

## DIVISION OF MEDICAL LABOUR.

*To the Editor of the Medical Gazette.*

SIR,

OUR medical library has just furnished me with your last *GAZETTE*, wherein is contained a letter from Dr. Robert Hull "On the Division of Medical Labour"—a letter which deserves the best thanks of every practitioner of medicine who is entitled to be ranked or placed within the pale of medical protection. This is the time when it may fairly be inferred (as a ministerial measure is contemplated) that some final adjustment will be come to by the legislature for the protection and government of the medical profession. It behoves all engaged in it, particularly those members of long standing, to record, in a respectable journal, the grievances under which each division suffers, more especially in reference to public appointments. Here the law ought and must be clear, decisive, and stringent, because obedience to its requirements can be enforced; and if they who hold such offices be tied down, and compelled to act honourably and with an apparent straightforwardness, such conduct will have a controlling influence in giving cast and tone to the neighbourhood in which they reside.

I would draw your attention to the appointment of what Dr. Hull so emphatically designates "a doctor-surgeon—the common foe of the profession," to the office of physician (simply from his title of doctor of medicine) to a provincial hospital, "becoming physician in the hospital, operator out of doors." This monstrous and ruinous infringement on the right of the general practitioner *must be put down*, though this crying evil, "through the ignorance of subscribers and the pusillanimity of officials," I fear prevails in the provinces to the extent of being *the rule rather than the exception*. This game was played here, and for a time successfully, to the great harassment and annoyance of the surgeons connected with the institution, but they (the surgeons) from the first "set their faces sternly and without compromise" against such an encroachment on their "manor," and have up to this day inflexibly declined *meeting* the "poacher" in consultation. The result tells well, as the profession will see, if you allow the narrative to be put on your pages.

An Ed. M.D. a few years ago settled in

this town, giving up a junior partnership with a general practitioner in the village of ——. He introduced himself to the profession here by stating that it was his determination to act as a *pure physician only*. On this footing he was received with countenance and friendliness: he offered his services as physician to the hospital, which were accepted, taking precedence of the surgeons of the staff, who had held office for many years, and were his seniors in age. He assisted and became a party to the revision of the rules, a copy of which I enclose you, and which you will see prohibits the physician of the institution from practising surgery, except in emergency, on pain of forfeiting his appointment. The new *pure* could not forget his old habits, and from little to more, he was found, in the space of about ten days, to have acted as man-midwife, and performed the operation of amputation. The surgeons summoned a special meeting of the committee, laid the conduct of their colleague before them, referred to the rules, called on them to put the laws of the institution in force, or that they (the surgeons) would be driven to resign. The physician denied that the rule applied to his private practice, nor would he be governed by them. The committee thought that if the doctor did his public duty satisfactorily they could not interfere with his private practice: the surgeons tendered their resignation on the spot, which were accepted, leaving the field clear for the M.D. The committee canvassed for the vacant surgeonships, and to the credit of the profession in the town, be it known that only one young man (he but of three weeks' standing) was found who would be associated with the *pure* doctor. In a few months the committee personally called on the old officers to lend their assistance in a great emergency. The house was full of in-patients, including twelve or more malignant typhus cases; the young surgeon had left from ill health, and the Dr. was canvassing for another situation. The old surgeons cheerfully obeyed the call of the committee—only making one condition, that they should not be interfered with by the *pure* doctor. They were afterwards requested to take office again, which they consented to do provided the *pure* doctor resigned. He was requested to resign. He did so. On his retirement an honorary medical staff was formed, and the following extract from the committee's report to the subscribers on the occasion applies to it. "The committee have received the support of an Honorary Medical Staff, unanimous in its co operation to realise the objects of the charity; arrangements have in consequence been made, whereby the attendance of an honorary

medical officer is daily given." The *pure* physician is now again a general practitioner.

By the proceedings I enclose you, you will see that the committee of the public institution here have been taught to stick to the rules. On application, the other day, of a Dublin M.D. to become physician, accompanying his written application with a verbal message that he would not be bound "by the rule so far as regarded his private practice," the committee unanimously resolved that they could not entertain the application.

I am, sir,

Your obedient servant,

A GENERAL PRACTITIONER.

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### LITTLE v. OLDAKER.

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*To the Editor of the Medical Gazette.*

SIR,

I THINK it right that the attention of the profession should be particularly directed to the trial of "*Little v. Oldaker*," which took place in the Court of Queen's Bench on Thursday last, and was reported in the newspapers of the day following.

The plaintiff is described as a *surgeon* and *physician*, of Finsbury Square, and brought his action to recover £26 for attending the defendant whilst suffering from a certain complaint. His patient considered the charge exorbitant, and therefore refused to pay the whole of it; the jury thought so too, and by their verdict ordered the patient to pay £15, or about three-fifths only of the demand. The plaintiff practises, and brought his action, as a *surgeon* and *physician*; consequently Lord Denman overruled the legal objection taken to the proceedings.

I wonder what Dr. Little's surgical colleagues of the London Hospital think of his thus poaching on their manor; and I ask this surgico-physician what course he thinks the general practitioner ought to take when requested to meet him in consultation. I, for my part, do not object to physicians undertaking the treatment of what are called surgical cases, whether they be in the nature of club foot or syphilis, but I do object, and strongly condemn any one, under such circumstances, professing to confine his practice to what are considered to be purely medical cases.—I am, sir,

Your obedient servant,

A GENERAL PRACTITIONER

BY PROFESSION.

July 4th, 1842.

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CASE OF  
AMPUTATION OF THE LEG,  
WITH SOME OBSERVATIONS ON A NEW MODE  
OF AMPUTATING.

BY THOMAS GREEN,  
Surgeon to St. Peter's Hospital, and Lecturer on  
Surgery at the School of Medicine, Bristol.

JAMES ALLPASS, aged thirty-four, a butcher, was admitted into St. Peter's Hospital, on Feb. 22, 1842, under the care of Mr. Green.

About four years ago the patient met with an accident, which caused a severe compound fracture of the right leg. After some time the bone united, not in a straight line, but obliquely, and there is now a considerable projection of bone at the seat of the fracture, around which the skin has been extensively ulcerated for some time. He has been repeatedly in the hospital: on each occasion the state of the ulceration was improved; but immediately on attempting to walk, it again degenerated into a state of foul extensive ulceration. On admission, the ulcer was found in a sloughing condition, with copious sanious discharge; the surrounding skin was of a fiery red colour, and the whole extremely painful; the limb is shortened, and he cannot bring the heel to the ground; tongue coated; pulse quick; complains of cough and loss of rest.

Finding that the leg was entirely useless, and that he had suffered in general health from the last extension of ulceration, he consented to the removal of the limb; but the operation was deferred until he was in a fit state to undergo it.

March 6th.—The cough has now ceased; tongue clean; pulse natural; he sleeps well; the ulceration is in an improved condition, and the skin healthy below the knee.

Mr. Green decided on performing the flap amputation, but in a different manner from that in which it is usually done. A transverse incision having been made across the front of the leg, through the skin, another was made through the integument at the back of the limb, including a large portion of the calf, and leaving skin enough to cover the flap of muscle, which was next formed by passing the catlin through the leg a short distance behind the bones, and cutting out in the usual way; the remaining muscles were divided by a transverse incision passing between the bones, which were next sawn through, and the arteries tied. Hæmorrhage still continued from a large vein, which it became necessary to secure by ligature. Three sutures and pieces of strapping were applied to keep the posterior flap in apposition. Cold cloths to be constantly applied to the stump, and to take im-

mediately half a grain of acetate of morphia in a draught.

9th.—The patient has had no unfavourable symptoms whatever until this morning, when hæmorrhage came on from the stump, from which he lost a considerable quantity of blood; the tourniquet was immediately placed round the thigh, and secured, by which the bleeding was arrested. He states that the limb has started occasionally during the night. His system shows the effects of loss of blood; his face and lips are pallid; feels faint and cold; pulse quick and small; tongue pale and tremulous. Cold water dressings to be constantly applied to the stump; to take at once half a grain of acetate of morphia; the tourniquet to be kept loosely over the femoral artery, and tightened immediately on the appearance of fresh hæmorrhage.

12.—There has been no further bleeding until this morning, when the stump bled again to some extent in a few minutes; the tourniquet was immediately tightened, and the hæmorrhage was stopped. Mr. Green having been sent for, directed the same means to be used; the man to be kept perfectly quiet, and closely watched. He stated that, on the return of any fresh hæmorrhage, he would apply a ligature round the femoral artery, considering it useless in the present stage of the wound to attempt to secure the bleeding vessel by opening the stump.

17th.—There has been no loss of blood since last report; a considerable portion of the wound on the fibular side has united.

April 6th.—The wound has entirely healed, except where one ligature hangs out; the others have come away. His general appearance is much improved.

20th.—The ligature only came away to-day, repeated gentle attempts having failed to bring it away previously; stump healed, and in good condition.

On the method of operating resorted to in this case, Mr. Green made the following remarks at the next surgical lecture at the Medical School:—

The mode of operating employed in this case I first tried a few months ago at St. Peter's Hospital, on a man named Morris, and found that by it all the inconveniences alluded to were avoided, for the man left the house with an exceedingly good stump, and now makes good use of his vocation as a sweeper of one of the crossings at Clifton. I shall now describe the operation as I performed it yesterday, and if you examine the limb removed, which lies on the table, you will easily understand its stages. An incision was made anteriorly across the fore part of the leg, in the usual situation, about two inches below the tuberosity of the tibia; it extended from the inner angle of that bone to a point behind the fibular; from the ter-



mination of this incision, on the inner side of the leg, the knife was carried downwards, to some extent, next across the limb posteriorly in a curved line, and brought up at the outer side, so as to unite with the front incision behind the fibula. In this manner a portion of integument was divided, which might be correctly described as representing two-thirds of an oval figure. This incision should go through the skin and subjacent tissue, down to the fascia covering the muscles; the contraction of the integument itself, with a trifling assistance, by drawing the skin upwards, leaving a separation of about half an inch between the edges of the incision. A long catlin was now pushed through the leg, about one-third of an inch behind the bones, and carried downwards, and next backwards, so as to make a flap of muscle, its edges corresponding with those of the retracted integument. The remaining muscles were next divided transversely; in this division are contained the large vessels and nerves, which are those cut transversely. The bones were separated, the sharp angle of the tibia was sawn off, and the arteries secured in the usual way. The flap, when brought up over the face of the stump, was entirely and abundantly covered by skin; three sutures were used, assisted by two broad pieces of strapping; a cloth wetted in cold water was applied over the stump, and the man removed. I prefer sutures in this operation, on account of the weight of the flap having a tendency to draw it down, and thus separate it from the anterior surface: these I always remove on the third day, and have not found any inconvenience from their use.—*Provincial Medical Journal*.

### TREATMENT OF FACIAL HEMIPLEGIA,

BY DIVISION OF THE MUSCLES ON THE  
OPPOSITE SIDE OF THE FACE.

BY M. DIEFFENBACH.

M. DIEFFENBACH having observed that facial hemiplegia, when of long standing, or depending on an alteration in the structure of the portia dura nerve, often resists every method of treatment that has been hitherto proposed, had long conceived the idea of remedying by operation the deformity which results from it. His first experiments with this view were made on two patients, one an old, the other a young man, in both of whom this affection produced considerable distortion. He excised an elliptical portion from the paralysed cheek, and united the edges by suture; the wound healed in a few days, with a decided improvement in the physiognomy of the two individuals. The affected

cheek, shortened by the loss of its substance, was enabled in some measure to antagonize the muscles of the opposite side, though the actions of speaking, eating, and laughing, were sufficient to destroy the equilibrium. This operation was too exclusively mechanical in its nature, and insufficient in its effect, long to satisfy the surgeon. Recent operations had given M. Dieffenbach occasion to observe, that by the loss of their natural antagonists, healthy muscles are wont to become more firm and contracted: this led him to draw an analogy between the consequences of the present affection and the contraction of muscles in certain cases of club-foot, which takes place at the expense of their paralysed opponents. This analogy suggested the idea of a similar operation, and success soon justified his anticipation. The attempt was first put in practice on a man who had long been the subject of facial hemiplegia, which was at that time confined to the upper eyelid. This part remained permanently raised, the man being unable to close the eye; the orbicularis muscle, which is dependent on the facial nerve, had lost its power, while the levator palpebræ, supplied from a different source, retained its action. M. Dieffenbach accordingly determined to divide the latter muscle: this was readily effected by a small incision on the outer side of the eyelid, just above the tarsal cartilage, in such a manner that the fibres of the levator were divided transversely, while those of the orbicularis were only interfered with in the line of their direction, and consequently but little injured. The result of the operation was surprising; the man could immediately open and close the eyelids: this sudden effect shewing that the orbicularis had not been completely paralysed, and that some fibres of the levator remained undivided. In three other operations the success was equally striking, and the benefit permanent. Scarcely any blood was lost by the operation, and the cure was complete in three or four days. In the fourth case the incision was followed by erysipelatous inflammation and suppuration, and the subject of it was only imperfectly cured after several months.

Encouraged by these results, M. Dieffenbach did not confine his operation to the levator palpebræ in cases of hemiplegia, but applied the same to other muscles retracted in consequence of this affection. The same mode was adopted as had been before employed by him in cases of convulsions of the muscles of the face, namely, subcutaneous incision. A small opening was made through the integuments of the middle of the cheek, in a line between the angle of the mouth and the lobe of the ear; through this a thin knife was introduced, and carried beneath the skin as far as the external canthus, and in withdrawing it all the muscles in this situation

were divided. By another incision made at the angle of the mouth, the muscles at the lower part of the face were cut across in an oblique line from above downwards, to the lower edge of the inferior maxillary bone. One of the remarkable results of this operation was, that the paralysed muscles, previously lax and inactive, immediately regained their energy in some degree, and were even able to execute some movements. The wounds were covered with charpie, retained in position by adhesive plaster; union taking place in a few days. The success generally surpassed the expectations of the operator; it was least remarkable in cases where the paralysis had been of long standing. The least fortunate attempt was made on a woman, 34 years of age, who suffered under facial hemiplegia almost from birth. The deformity was extreme, the face being much drawn to the right side, and the eye kept widely open day and night. M. Diefenbach divided the corresponding levator palpebræ, and the contracted muscles of the sound side of the face. The immediate benefit of the operation was very striking; the movements of the eyelid were restored, as well as those of the paralysed cheek, sufficiently to allow the patient to laugh without its occasioning distortion of her features. But the success was not permanent; the deformity in the face soon returned, and a second operative attempt was made with no better result as regarded the appearance of the face; but the eyelid retained its mobility, and this was considered by the patient a sufficient recompense for the suffering she had undergone.—*Medizinische Zeitung*.

#### PROPERTIES OF ERGOT OF RYE.

M. BOUJEAN, pharmacist at Chambéry, presented to the Academy of Sciences a memoir on the toxicological and medical history of the ergot of rye, in which he classes this substance among narcotics, and says that its effects bear close relation with those of morphia, though it contains no trace of that alkaloid.

The most interesting result from the researches of M. Boujean is, that the ergot of rye contains two active principles, distinct from one another—a remedial and a poisonous agent. The first is a reddish brown extract, very soluble in hot water, which possesses in the highest degree the valuable obstetrical and hemostatic properties which have long been recognized in the ergot. The other is a fixed colourless oil, very soluble in cold ether, insoluble in boiling alcohol, in which alone reside the poisonous properties of this substance. The different nature of

these two products admits of their easy separation, and of the remedy being obtained entirely isolated from the poison. As the former is altogether inoffensive, great advantage thus results to practical medicine, that a large dose may be administered without the fear of any of the accidents which are attributed to the ergot of rye itself. This extract acts with extreme rapidity in all hæmorrhages, without producing any unfavourable action, whatever may be the quantity employed. M. Boujean has repeatedly administered large doses in severe hæmorrhages, followed by abortions or otherwise, which instantly yielded to the influence of this remedy. He therefore designates it the *Extrait hémostatique*.

The oil acted on animals in the same manner as the ergot itself, only its effects were more prompt. They were almost immediate in some animals, as birds. They died in about twenty-four hours, without ever recovering from the state of stupor into which the poison had plunged them. To obtain this oil with all its properties, it is necessary to extract it with cold ether, and in the operation to avoid all influence of heat; and the principle will be found altogether inert if obtained from ergot which has not arrived at maturity.—*Gazette Médicale*.

#### TREATMENT OF UMBILICAL HERNIA IN CHILDREN BY LIGATURE.

A CHILD, aged 8 months, was brought to M. Bouchacourt suffering under umbilical hernia, which had been observed a few days after birth: various means had been employed to keep the swelling reduced and to effect a cure, without producing any benefit. The hernia easily protruded, and formed a considerable swelling. When it was returned the finger readily entered the unobliterated ring, and felt its smooth and regular edge. The operation was conducted as follows:—The child being secured and the hernia returned, the surgeon assured himself by careful examination that no intestine or other viscus remained in the sac, by rubbing its sides against one another between the finger and thumb. Keeping up a pressure with the finger close by the ring to prevent the protrusion of any part into the sac, a needle armed with double thread was passed through the base of the projection in the integuments into which the hernia protruded as into the finger of a glove, and the threads being separated, each was tied upon the corresponding half of the swelling. The base

was also enveloped by a third thread carried round the whole, and drawn tight. The child did not appear to suffer much—only a small piece of lint placed on the part. The first night the infant cried and slept little, but afterwards went on well, with the exception of slight fever in the evening and a diminution of appetite, no alteration being observed in its other functions. The stools were regular, and it had no vomiting. After a few days the encircled part swelled, sloughed off, leaving a considerable ulcer. In two months and two days after the operation, a very small surface remained unhealthy, giving vent to a discharge which scarcely tinged the linen. The ring appeared to be obliterated. The hernia had not returned, and from the day on which the ligature was applied, the swelling had not once shown itself, notwithstanding the efforts and cries of the child.—*M. Bouchacourt, in Revue Médicale.*

EMPLOYMENT OF ERGOT OF RYE  
IN A CASE OF HYDATID MOLE.

MADAME H., eighteen months after marriage, suffered under a suppression of the menses. She had vomiting, and a distaste for food. Two months afterwards, the abdomen having swelled to a considerable size, the suspicion of pregnancy was thought to be confirmed. At the end of four months she experienced acute pain in the loins, and uterine hæmorrhage commenced. M. Cabaret was called in. On his arrival the discharge of blood had ceased, but the pain continued. From the unusual rapidity with which the increase in the size of the abdomen had taken place, and the presence of a soft substance which could be distinguished within the hard and undilated neck of the uterus, he judged the presence of a mole. Shortly afterwards the evacuation of certain portions of cysts confirmed his opinion; and having unsuccessfully employed several means to excite uterine contractions, he had recourse to the ergot of rye, which, in a few hours, effected the expulsion of the entire mass. It consisted of a number of hydatids, or vesicles with thin transparent walls, easily broken down, and filled with a limpid slightly albuminous fluid.—*Revue Médicale.*

RECEIVED FOR REVIEW.

Pulmonary Consumption; its Prevention and Cure established on new views of the Pathology of the Disease. By Henry Gilbert, M.R.C.S.L.  
Mr. Miller's Introductory Lecture on Pictorial Anatomy, delivered to the Students

of the School of Design of the Honourable the Commissioners of the Board of Trustees for the Encouragement of Scottish Manufactures, and published at the request of the Honourable Board.  
Twelfth Annual Report of the Belfast District Lunatic Asylum. March 1842.  
Report of the Committee of the Lancaster General Dispensary and House of Recovery. For the year 1840.

ROYAL COLLEGE OF SURGEONS.  
LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, July 1, 1842.  
E. Lawford.—W. G. Taylor.—E. Lloyd.—M. R. Scraggs.—H. C. Fixott.—G. P. Atkinson.—P. Magenis.—J. G. Sime.—J. B. Carlile.

APOTHECARIES' HALL.  
LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, June 30, 1842.  
W. C. Moat, 14, Thistle Grove, Little Chelsea.—G. J. Gates, Peterborough, Northamptonshire.—C. White, Southwark.—E. S. White.—C. Rose, Swaffham, Norfolk.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, June 25, 1842.

Small Pox .....	7
Measles .....	27
Scarlatina .....	24
Hooping Cough .....	20
Croup .....	4
Thrush .....	6
Diarrhoea .....	8
Dysentery .....	1
Cholera .....	1
Influenza .....	1
Typhus .....	20
Erysipelas .....	7
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	109
Diseases of the Lungs, and other Organs of Respiration .....	224
Diseases of the Heart and Blood-vessels ....	19
Diseases of the Stomach, Liver, and other Organs of Digestion .....	67
Diseases of the Kidneys, &c.....	5
Childbed .....	10
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	4
Rheumatism .....	1
Diseases of Joints, &c. ....	1
Ulcer .....	3
Fistula .....	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat .....	23
Old Age or Natural Decay.....	36
Deaths by Violence, Privation, or Intemperance .....	43
Causes not specified .....	3
Deaths from all Causes .....	742

WILSON & OSILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, JULY 15, 1842.

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## LECTURES

ON THE

### PRINCIPLES AND PRACTICE OF PHYSIC,

*Delivered at King's College, London,*

By Dr. WATSON.

*Acute rheumatism; symptoms; varieties; treatment. Chronic rheumatism; phenomena; plan of cure.*

*Gout: description of a paroxysm; progress of the disease; general state of the health in gouty persons; causes of the disease; diagnosis between gout and rheumatism.*

I PROCEED, this afternoon, to the consideration of that very common, very painful, and sometimes very perilous, disease, *rheumatism*. There are two species of it, the acute and the chronic. They graduate, however, insensibly into each other; and the chronic is often a sequel of the acute form. Yet this is not necessarily so. Chronic rheumatism occurs in persons who have had no preceding attack of the disorder in its acute stage or degree.

Rheumatism implies inflammation: but, as I mentioned in an early part of the course, it is inflammation of a peculiar or specific kind. In the first place, it is inflammation of a particular tissue—the *fibrous tissue*: and it may therefore manifest itself wherever that tissue is employed in the fabric of the body. No doubt the inflammation does involve other tissues also; but it is always, probably, by extending to them through what has been called *contiguous sympathy*. Thus we have the *synovial* membrane of a joint inflamed in many cases, the inflammatory action having spread from the fibrous textures around the joint: or, as I formerly pointed out to you more in detail, the serous surface of the pericardium, and the serous

surface (or what is analogous to a serous surface) of the inside of the heart, and especially that part of it which is carried over the valves—each and all of these serous membranes are extremely liable to be affected with inflammation in the acute form of rheumatism: but in all of them it is probable that the *fibrous* tissue was the first to suffer. The pericardium is, as you know, a fibro-serous membrane; and fibrous tissue is interposed between the folds of the serous membrane, in the cardiac valves.

Rheumatism, therefore, is essentially inflammation of the fibrous tissue: and it most commonly seizes upon the fibrous parts that lie round the *larger joints*; the ligaments and the tendons: and in this respect you may almost consider the perpetually moving *heart* as one of the large joints. Yet this inflammation, when confined to the fibrous tissues, is not *common* inflammation. At any rate, it does not reckon among its events (as common inflammation does) either suppuration or gangrene. If suppuration sometimes occurs (and it certainly occurs very rarely) it is because the rheumatismal inflammation has extended to contiguous textures, and then has run the ordinary course of inflammation. Inflammation of the *cellular* tissue around a joint may thus inflame and suppurate. The inflammation of the *synovial* membrane *may* be of sufficient intensity to give rise to the formation of pus. When, however, the inflammation extends to the serous tissues within and around the heart, the products of the inflammation are just the same as when inflammation of the same textures, of the common kind, is any how produced.

Acute rheumatism, then, consists in redness, heat, pain, and swelling (that is to say, in inflammation) of the parts lying around, or entering into the composition of, one or more of the larger joints of the body; generally of several at the same time, or in succession; with a disposition to shift from one joint to another, or to certain internal

organs, and especially to the membranes of the heart; and with fever.

This tendency to shift its place—to what is usually called metastasis—is a very remarkable feature of the disease. The inflammation will appear, in one joint, suddenly, and as suddenly subside in another which it previously occupied: and then, perhaps, it will jump back again to its old quarters. In many instances, however, it invades fresh joints without wholly ceasing, and sometimes even without diminishing at all, in those formerly affected. It may visit in this way every large joint in the body, and even seize upon some of the small ones; or it may possess nearly all of them at once. It is most commonly seen to affect the ankles and knees, the knuckles, wrists, and elbows. It is often seated in the shoulders also; and in the hips. The joints of the fingers frequently suffer; and I have seen one instance in which the joints of the jaws were manifestly implicated in the rheumatic inflammation. But by far the most serious and dangerous leap which the diseased action is apt to take, is to the membranes of the heart.

But I pointed out to you, in a former lecture, the symptoms of rheumatic carditis, its consequences, the various ways in which it connects itself with the joint affection, and the treatment by which we are to attempt to moderate it. I dismiss, therefore, this, the most momentous complication of acute rheumatism, from the present discussion; and shall confine myself solely to the disease as it manifests itself externally.

The shifting and migratory inflammation of the textures lying round or composing the larger joints, is attended with high inflammatory fever; with a remarkably full bounding pulse; with flushed cheeks; headache; profuse, drenching, sour-smelling perspirations, which distress and weaken the patient but bring no relief to his pain; with a white-coloured, dirtyish, thick fur on the tongue, which is red, however, at its tip and edges; with turbid and acid urine. But this severe inflammatory fever (*synocha* Cullen calls it) has no tendency to degenerate into a typhoid form: and *that* is a striking feature in the complaint. Neither is the intellect affected, except when carditis takes place: and then, as I stated formerly, violent delirium is apt to ensue, misleading the practitioner, drawing his attention away from the chest, where fatal changes are in progress, and fixing it upon the head, where no inflammation at all exists, but which is disturbed sympathetically of the cardiac disorder. With this exception, we do not find patients in acute rheumatism *delirious*. Throughout all this febrile disturbance there is no coma, no marked disorder of the stomach or of the bowels, no vomiting, no diarrhoea, no pete-

chise, no aphthae, no sordes about the mouth, all which are of ordinary occurrence in the course of common continued fevers.

The joints are exquisitely *tender*, as well as painful. The fibrous tissues, which are endowed with but little sensibility in their sound and healthy state, become acutely painful when occupied by inflammation. The pain is increased by pressure; and therefore by whatever implies pressure; by movements of the joints consequently. The patients are reduced to perfect helplessness by the pain. Their common phrase is that they have entirely lost the use of their limbs: and this is true enough in fact, but not true in the medical sense of those words. They have not lost the *power* of moving them; there is no *palsy*; but they *dare not* move them, because the effort gives them so much torment.

Pain in the affected joints is more constant than swelling; and swelling more constant than redness. The swelling differs also in different cases in rather a remarkable manner. In fact, there are two varieties of acute rheumatism: a circumstance first noticed by Dr. Chambers at St. George's Hospital; and afterwards made public by Dr. Francis Hawkins in his *Gulstonian* lectures. The varieties are spoken of under the names of *fibrous or diffused* rheumatism; and *synovial* rheumatism. I apprehend, however, that in both of them the inflammation has its starting-point in some fibrous texture: but that in the one, a considerable extent of that texture is implicated, while the inflammation does not involve the neighbouring synovial or serous tissue; and in the other, the extent of fibrous tissue affected in the outset is comparatively small, while the local symptoms are more expressive of the secondary synovial disease.

I will briefly state the distinctive characters of these two varieties of what is primarily and essentially the same malady.

In the one, then, the inflammation commences in the immediate neighbourhood of one of the larger joints: not *in* the joint, but *near* it. It attacks the tendons, fasciæ, ligaments, and possibly also the muscles. There is not at first much redness, or swelling; but after the pain has been of some duration, there is a puffiness around the parts affected, caused apparently by turgescence of the blood-vessels, and at length slight pitting, or *œdema*, may supervene, from effusion into the surrounding cellular tissue: and what redness is present is disposed in streaks, following the course of the tendons.

On the other hand, in the synovial variety, which shews itself more frequently and more plainly in the knee than any where else, the pain which marks the onset of the complaint does not last long before some



degree of swelling is perceptible, together, in most instances, with slight redness of the skin: and this swelling is not due so much to turgescence of the blood-vessels, or to oedema of the cellular tissue, as to fluid poured into the *cavity* of the joint. And the form and character of the swelling indicate that it is the result of the fulness and distension of the synovial membrane; it is tight and elastic, and protrudes, as it were, through the spaces that intervene between the tendons and ligaments by which it is in other parts bound down and restrained: and *fluctuation* is often distinctly perceptible in the superficial joints, when both hands are applied to them.

These are the *local* differences between the two forms of the disease. And there are differences equally well marked between the constitutional symptoms that attend them.

It is in that form which *κατ' ἐξοχήν* is called *fibrous rheumatism*, that the inflammatory fever runs so high; that the tongue is so thickly furred; that the round, full, bounding pulse occurs; that the profuse, spontaneous acid perspirations break out, which exhaust the patient's strength without alleviating his sufferings; that the urine is high coloured, and deposits a copious sediment like brick-dust.

In the *synovial* form, the fever is either less intense from the beginning, or soon moderates after the joints begin to swell; the tongue is less foul; the patient sweats much less. It is to this form that the term *rheumatic gout* is often applied.

It is said that the tendency of the inflammation to fix upon the cardiac membranes is less noticeable in this than in the fibrous form; an important difference if it be a true one; as I am inclined to believe it is.

Now, of these two varieties the fibrous is infinitely the most common: and in the majority of cases, if the disease runs on, you will find the characters of each variety blending and mingling together: sometimes the synovial symptoms predominating, but much more frequently the others. And this is just what might be expected, supposing the notion to be correct that in both cases the fibrous tissue is primarily affected; only differently in degree and in extent.

I know of no other exciting cause of acute rheumatism than exposure to cold; and especially cold combined with moisture. And this is the reason why the disease is very common among the poorer classes of society, who are more in the way of that cause and cannot guard against it so effectually as their wealthier brethren; among whom it is comparatively rare.

Acute rheumatism is principally a disease of youth; prevailing most, I believe, from the age of puberty to that of 35 or 40. I

have repeatedly, however, seen it in children; sometimes as early as the third or fourth year: and I stated to you some time ago, that the chance of the joint affection being complicated with rheumatic carditis is the greater in proportion as the patient is the younger. With, perhaps, one exception, I never knew the disease occur in an unequivocal form before puberty, without its being attended with inflammation of the lining or investing membranes of the heart.

I have already told you what I believe to be the proper plan of treatment to pursue when rheumatic carditis is present: in that case the affection of the limbs is of secondary consequence. But what are we to do when there is no complication of the joint disease; no invasion of any of the viscera?

Why, if you seek for instruction upon this matter in books, or even among practical men, you will meet with a very perplexing diversity of opinion. Apart from the cardiac affection, acute rheumatism has no *danger* about it; and the articular inflammation terminates, sooner or later, in recovery in most cases, whether the heart be implicated or not. And most persons who have been for any considerable time in practice have their own favourite method of conducting the disorder to its termination. While many employ free blood-letting, and other active antiphlogistic remedies, some, on the contrary, even in the present day, put their trust in bark. Some give large doses of calomel in the outset of the disease, such as half a scruple or a scruple, with or without a grain or two of opium; and they repeat the dose daily, or oftener, till the urgent symptoms give way; and in this manner I have seen the disease apparently cut short. But I have also known many instances in which the disease was painful, and protracted and obstinate, although this practice was adopted early, and fairly carried out. Some physicians, again, give smaller and more frequent doses of calomel and opium: and some think opium alone to be as useful as this combination. Others depend mainly upon colchicum: others, upon large and repeated doses of conium: and some attempt the cure of acute rheumatism by sweating the patient by means of guaiacum and similar stimulant medicines, and a profusion of bed-clothes.

Now you may be sure—when men's opinions concerning the treatment of a disease which is of common occurrence and easy recognition, are thus unsettled and diverse—you may be sure, first, that no specific for that disease has yet been discovered; and secondly, that the disease is not very obedient, or not steadily obedient, to any remedial plan. When I first began to practise, I pleased myself, now and then, with the belief that I had ascertained the

best cure for acute rheumatism: so rapidly and decidedly did the disorder recede and cease upon the administration of such or such a remedy. But, on the next trial of it perhaps, my expectations have been miserably disappointed. This marked improvement has happened under the use of colchicum, of conium, of calomel with opium, of alkalies. I did not, in the prosperous cases, mistake spontaneous recovery for cure. The change was too great and immediate, and the instances of success too numerous, to admit of that explanation. Whether it be that slighter diagnostic marks have been overlooked, and that sometimes *gout* has in reality been cured under the semblance of rheumatism—whether bodily idiosyncrasies have withstood the influence of remedies—or whether atmospheric agencies have kept up the disorder in spite of proper treatment—I cannot tell: certain it is that we are occasionally baffled, and the patient continues to suffer, notwithstanding the diligent enforcement of all the approved remedies and plans of treatment, one after the other. I am far, however, from thinking that remedies are useless: and I do by no means assent to the dictum of the first Dr. Warren, who, when asked what was good for acute rheumatism, answered “six weeks.”

In the fibrous form, with the bounding pulse, the flushed face, the high inflammatory fever, you may bleed your patients from the arm; especially if they are young and robust. They will bear to lose a large quantity of blood without fainting; and you will always find the blood drawn to be remarkably buffed and cupped. The pain and inflammation are local; but the case is not adapted to local remedies. We may, by leeches, or cupping, or cold applications, be able perhaps to subdue the inflammation in a knee or an elbow: but from the migratory character of the disorder, we incur the risk, by such topical measures, of giving the inflammation a new and a more serious location.

Venesection will, almost always, afford a marked degree of relief to the sufferings of the patient: but the relief will seldom be complete or permanent: and we may sometimes with propriety repeat the bleeding. In very few instances, however, can we hope to extinguish the disease by blood-letting. And this is one of the cases in which you must not take the state of the blood already drawn as a criterion of the propriety of abstracting more. The blood will remain ready to shew the buffy coat long after the use of the lancet has ceased to be available or safe.

The advantages of blood-letting in this complaint are, first, the partial relief which it bestows. It is seldom that the pain is not sensibly mitigated, and the fever calmed, provided the bleeding has been carried to a

proper extent, sufficiently soon; secondly, free and early venesection may sometimes perchance (but not often) cut short the attack. This, however, is a favourable effect which you must not reckon upon, and which I would not advise you to aim at. But, in the third place, blood-letting is very serviceable, by preparing the body for other remedies: for calomel, opium, purgatives, colchicum.

I believe few persons now adopt the plan of forced perspiration for the cure of acute rheumatism. Formerly it was the fashion to give powerful sudorifics: Dover's powder or antimony, in large doses: and the patient was “*accinctus ad sudorem*,” covered up in bed between thick blankets, with a hot bottle or brick at his feet. But in the severe fibrous variety of rheumatism the perspiration is profuse without any artificial means being used to excite it; and it is not accompanied by the smallest alleviation of the pain: nay sometimes the patients will tell you that they are worse, in that respect, while the sweating continues.

The preparations of colchicum have sometimes, whether venesection has been premised or not, an almost magical effect in quelling the disease. Usually, in the cases in which they are successful, the condition of the success seems to be that they shall exercise some marked influence upon the stomach and bowels. Colchicum is very apt to occasion deadly nausea and vomiting, griping, and diarrhoea. And when these consequences ensue from its use, the inflammation of the joints often subsides entirely. At any rate, if the rheumatism does not give way when the stomach and bowels become thus affected, you may be certain that to push the colchicum farther would be useless.

Our wishes, however, and our expectations, from colchicum, are often doomed to be defeated. I believe that in proportion as the synovial symptoms predominate, or mix themselves distinctly with the fibrous—in proportion as the disease approaches in its characters to gout—you may expect to be successful with colchicum. Large doses are not requisite. Twenty minims of the wine or of the tincture may be given every six hours, until some result is obtained. Or a grain of the inspissated juice, or of the acetous extract of colchicum, every four hours. Under this treatment the disease sometimes vanishes within three or four days; the medicine producing sickness and purging, and the rheumatism rapidly declining. Occasionally the same favourable event takes place, although there has been no disturbance of the stomach or bowels.

There are some cases which yield readily to calomel and opium: and in the fibrous variety I think that calomel and opium are the remedies to which, after sufficient bleed-

ing, you will do well to trust. For it is in this variety that the extension of the disease to the membranes of the heart is so liable to happen: and if any thing can protect the patient against this fearful complication of a malady which, previously attended by no danger, becomes by this addition almost necessarily fatal—or if any thing can arrest the carditis before it leaves indelible mischief imprinted on the heart—it is (in my opinion) *mercury*.

Dr. Hope has lately (1837) published an account of a particular mode of using calomel and opium in this disease, which mode he learned from Dr. Chambers, and which is followed, more or less closely, I fancy, by many other physicians. It is said to be so successful, that even the details of it ought to be known. The plan is described as follows:—After a full venesection, or even two, in the robust, but without any bleeding in the feeble and delicate, eight or ten grains of calomel, with a grain and a half of opium, according to the age of the patient and the severity of the case, are administered every night; and followed every morning by a strong black dose, sufficient to ensure four or five stools at least. With this treatment is combined, thrice a day, a saline draught containing from fifteen to twenty minims of the *vinum colchici*, and five grains of Dover's powder. When the pain and swelling are greatly abated, if not almost gone (which Dr. Hope affirms to happen often within two days, and almost always within four), the calomel is omitted; or it is omitted sooner if the gums become at all tender. The opium, however, is continued to the amount of a grain or a grain and a half at bed time; and in severe cases a grain also at noon is added: and the colchicum, and the black dose, are still given as at first. Dr. Hope considers it a case of exception if the patient be not well in a week.

The following are stated by Dr. Hope as being the great advantages of this plan of procedure:—1. That the patient is generally sound, well, and fit for work, in a week or ten days after the pains have ceased. 2. That the gums are rarely affected, especially if you previously ascertain that the patient has not a morbid susceptibility of mercury. 3. That it is rare to see inflammation of the heart if the treatment is early begun; not oftener, he thinks, than in one of a dozen cases. 4. If the slightest symptom of endo- or peri-carditis *does* supervene, a few extra doses of calomel and opium, given every four or six hours, will generally affect the constitution in twenty or thirty hours, which, with two or three cuppings or leechings on the region of the heart, almost always places the patient in a state of safety.

Now believing that some such plan as this, made up of blood-letting, purging, calomel

and opium, and colchicum, is as good as can be pursued; and indeed that, with individual modifications, it is very much pursued, especially in London at present; still I cannot help feeling great doubt—doubt which I would willingly not entertain—about all the advantages just enumerated. Too often we do not see the patient till there is such disease of the heart present as is manifest to the ear; and then, as I stated in a former lecture, *perfect* recovery and repair seem scarcely within the scope of possibility. Too often, when the patient is seen early, the system refuses to admit of the specific protection of the full mercurial action. There is a practical objection also to the exaction of four or five motions from the bowels of these rheumatic patients every day; I mean the inconvenience, the increase of pain, and the fresh exposure to cold, occasioned by frequently going to stool: and this is a disadvantage likely to be particularly felt in *hospitals*.

Bark used to be highly thought of for the cure of acute rheumatism: but it is only beneficial, or safe, during the convalescence. Where the system has been much reduced or broken by the complaint, or by the discipline the patient has undergone, I think that the decoction of cinchona is of service in fortifying the body against the renewed agency of those causes on which the original attack depended.

Cases frequently occur which are neither absolutely acute, nor absolutely chronic. The inflammation, without being intense in any one joint, lingers in many; and the fever, though not entirely absent, is moderate. The joints are hot and painful, and the skin is dry, and there is some thirst. To this intermediate character the term *subacute* is sometimes applied; and it will serve our purpose of distinction.

Now in this form of the disease, as well as in the more active form, the urine is almost always loaded with lateritious matters, and strongly acid. Looking upon this as an indication of treatment, I have prescribed alkalies, and with much success: the liquor potassæ, for instance, to the amount of a drachm daily, for several days together; keeping the bowels free by laxative medicine. Under this plan, more surely in my experience than under any other, the urine clears, the pain abates, and the joints are liberated. Nitre has been praised of late as being eminently successful against rheumatism: I have not had much opportunity of trying it, but I should think it likely to do good in these subacute cases.

There are two kinds of *chronic* rheumatism: one attended with local heat and swelling, although the constitution at large sympathizes very little or not at all with the topical inflammation; the other characte-

alized rather by coldness and stiffness of the painful joints. In the former of these the pains are increased by pressure, and by movements of the limbs, and by external warmth; the warmth of a bed, for example; and there may be even some slight degree of pyrexia at night. In truth this form of chronic rheumatism claims a near relationship with the acute, into which it sometimes passes, and of which it is frequently the sequel. It accordingly requires antiphlogistic remedies, only less vigorously applied. It is important for you to know that, in these cases, you may, with less hesitation, less fear I mean of driving the inflammation to some more vital part, apply leeches, and cold washes, to the painful joints. Otherwise the principle of treatment remains unchanged. The complaint is, however, often obstinate, and lingering, and prone to recur. It frequently involves and cripples the smaller joints, especially those of the knuckles and fingers; rendering them knobby, and distorting their form and position. The fingers take a permanently oblique direction, slanting outwards towards the ulna: and Dr. William Budd has drawn attention to the curious fact that the corresponding joints of the two sides of the body are always affected exactly in the same manner. To use a paradoxical expression, the deformity is symmetrical. One crooked joint is just the copy of its fellow. Surely this indicates the *constitutional* origin of the disorder.

In the other form of chronic rheumatism, what some call *passive*, the remedies that answer best are of a different kind. The pain is alleviated by friction of the joint; and the patients are most comfortable when they are warm in bed, and especially when moderate perspiration is present. They are singularly benefitted also by summer weather. Persons who are much troubled by this wearing complaint, and who can afford to live where they please, would do well to take up their residence in a warm climate. Wherever they may be, such patients should be protected against atmospheric vicissitudes by warm clothing: they should be cased in flannel from the neck downwards. Warm bathing is of great service; and especially baths of salt water, of a temperature not less than 100°, that they may act as a stimulus to the cutaneous circulation: warm douches; the vapour bath; or the hot air bath, of which, as I said before, the patient may receive the benefit lying in bed. And to warm clothing, and warm bathing, may be added friction, with some stimulating liniment, and what is called shampooing. It is in these cases that stimulating internal medicines are often of use. Turpentine; some of the animal oils, the cod-liver oil for instance; guaiacum. Opiates, too, are frequently remedial of the pain; and there can

be no better form for their administration than that presented to us in the celebrated Dover's powder; the *pulvis ipecacuanhae compositus* of the Pharmacopœia.

There is a remedy which has recently come into extensive use, for the relief of chronic rheumatism; I mean the iodide of potassium. It is *most* certain of acting beneficially when that fibrous part the *periosteum*, is principally affected. Its virtues in the case of venereal nodes (*i. e.* in venereal inflammation of the periosteum) were first distinctly pointed out by Dr. Williams, of St. Thomas's Hospital. I believe it is equally effectual upon whatever cause chronic inflammation of the same part, with nodes and thickenings, may depend.

Some of you probably saw a woman who was lately my patient in the hospital, and who had been worn down to a skeleton by the pain she had endured from chronic periostitis giving rise to nodes, which did not appear to be traceable to syphilis. She had been in the habit of lulling the pain by large opiates at night, and begged to have them after her admission. I gave only the iodide in the ordinary dose (five grains thrice daily), and she slept without opium; and in a week or two lost her nodes, and was perfectly well.

Closely allied to acute *rheumatism*, and yet distinct from it, is the singular disease which in this country is popularly called the *gout*: which Cullen, in the first instance, was disposed to term arthritis; but as arthritis would imply inflammation of all or any of the joints, he afterwards adopted the ancient name of *podagra* (foot-pain).

The same author has given, in his *First Lines*, an excellent account of the phenomena which constitute a paroxysm of gout. It is copied from Sydenham, who drew from nature; for he had himself suffered frequent and severe visitations of the disease during a period of thirty-four years.

The attack begins, most commonly, an hour or two after midnight. The patient, who had gone to bed and to sleep in his usual health, and without suspecting what was about to happen, is awakened by a pain in one of his feet, mostly in the first joint or *ball* of the great toe; but sometimes in other parts of the foot—the heel, the instep, the ankle. With the coming on of this pain there is generally more or less of a cold shivering, which gradually ceases as the pain gets worse, and is succeeded by heat. The pain grows more and more violent and intolerable; and is spoken of by those who suffer it as amounting to torture. It is a grinding, crushing, wrenching pain; or a burning sensation as if a hot iron were pressed into the joint. Some humorous Frenchman described it in this way. "Place (said he) your joint in a vice, and screw the



vice up until you can endure it no longer. That may represent rheumatism. Then give the instrument another turn, and you will obtain a notion of the gout." The pain is attended with great restlessness and misery, and exquisite tenderness. The patient cannot bear the weight of the bed-clothes upon the affected limb; nor the jar of a heavy foot-fall in his chamber. In a vain search after comfort he is perpetually shifting his foot from place to place, and from posture to posture. At length, about the ensuing midnight, the pain remits; sometimes gradually, sometimes so suddenly that the patient attributes the relief to his having at last found an easy position. He falls asleep in a gentle perspiration, and when he wakes the next morning he finds the part, which had been so painful, to be red, swelled, tense and shining, surrounded by more or less oedema, and by turgid veins. The same series of symptoms recur, in a mitigated degree, for some days and nights; and then the disease often goes entirely off, not to return till after a long interval.

As the oedema subsides, and the redness fades, the cuticle of the part that has been inflamed peels off; and this process of desquamation is generally attended with troublesome itching.

Such is a picture of an attack of gout, occurring in an adult subject, for the first time, and in its most regular and genuine form.

Attacks of this kind are preceded, in most instances, by some marked disorder of the functions of the stomach; diminished appetite, flatulence, heartburn, nausea perhaps. And during the paroxysm the urine is very high coloured, and acid, and turbid; depositing a copious pink, or brick-dust sediment. The stools, also, are unnatural; pale, or of a dark green, and very offensive. After the fit, when the complaint has ceased entirely, it generally (says Cullen) "leaves the person in very perfect health; enjoying greater ease and alacrity in the functions of both body and mind, than he had for a long time before experienced."

But, the disorder, which has thus departed, is very apt, nay unless extreme care be taken to prevent it, and even in spite of all care, is almost sure to return. At first, perhaps, it recurs not oftener than once in every three or four years; but after some time the intervals are shorter, and the attacks become annual, happening about the same time of the year: afterwards they come twice every year; and at length they return several times during the course of the autumn, winter, and spring. And as the fits are more frequent, so also are they more protracted, till, in the advanced state of the disease, the patient is hardly ever free from

it, except perhaps for two or three months in summer. I do not mean that all this occurs invariably in all cases alike; but this is a sketch of the general course of the complaint.

There are other phenomena also to be noticed as time advances, and as the disease is repeated. At first, I say, it commonly appears in one foot only; afterwards every fit includes both feet, the one after the other: and as the disease continues to recur, it not only attacks both feet in succession, but after having ceased in the foot which was secondly visited, it will return again into the foot first affected, and perhaps a second time also into the other. It passes too into other joints, both of the upper and lower extremities, large as well as small; so that there is scarcely a joint that may not, at one time or another, be seized upon. But as the disease proceeds, and the fits get to be more numerous, the pains are commonly less violent than they were at first; the patient is, however, more affected with sickness, and suffers more in his general health.

Again, after the earlier attacks, the joints usually recover entirely their former strength and pliancy: but when the disorder has returned again and again, they are not so readily nor so completely restored to their previous condition, but remain weak and stiff: and sometimes they lose at length their capacity of motion altogether.

Also, in many gouty persons, but not in all, after the disease has frequently recurred, what are called *chalk stones* form; concretions that look exactly like chalk take place around and outside the joint, filling up the cellular tissue, and lying, in general, immediately beneath the skin. The material of these curious concretions is deposited at first in a half fluid state, and resembles soft mortar; but the more watery ingredients being afterwards absorbed, it becomes dry and hard. Of course when this stuff is deposited in any quantity on the outside of a joint, it must limit in a great measure, or entirely prevent, the motion of that joint. And sometimes matter of the same kind is effused into the joint itself; as I have once seen in a gouty patient who died in the Middlesex Hospital.

Gout is a disease that was well known, and well observed, by the ancients. In its genuine form it could neither be overlooked nor mistaken. Many very interesting facts relative to this painful disorder have accordingly been ascertained: and I proceed to notice the chief of these; but I must do so with as much brevity as I can.

First, then, gout is an *hereditary* disease. I do not mean to say that the disposition to it is always a transmitted disposition; but that the complaint is much more likely to



occur in persons, in whose pedigree it can be traced, than it is in other persons. It may, I believe, be generated by certain habits of life; and, on the other hand, in spite of an inherited predisposition, the disease may be staved off, and averted. Let the son of a rich and gouty nobleman change places with the son of a farm servant, and earn his temperate meal by the daily sweat of his brow, and the chance of his being visited with gout will be very small. Granting this, we see reason, independent of the general analogy of hereditary disorders, why the gout may be expected sometimes to leap over a generation, just as family likenesses are known to intermit; while yet the *disposition* may descend to the children of those who, in their own persons, have never suffered the *disease*. Among 522 gouty persons, concerning whom Sir Charles Scudamore had collected information, 332 could trace their disease to the father, mother, grandfather, grandmother, uncle, or aunt. In the remaining 190 the disease was not known to have existed on either side of the family tree.

2. There is a pattern of body which is believed to be favourable to the acquisition of gout. "It attacks (says Cullen) especially men of robust and large bodies, men of large heads, of full and corpulent habits, and men whose skins are covered with a thicker *rete mucosum*, which gives a coarser surface."

3. Whether, in a given individual, there be an inherited tendency to the disorder or not, its access is promoted in a remarkable manner by a full and luxurious mode of life, and by sedentary or inactive habits.

4. It is observed of gouty persons, that they are usually subject to nephritic complaints also, to fits of the gravel, to renal and vesical calculi. These disorders of the urinary organs commonly begin to manifest themselves after the gout has plagued the patient for some time. They do not coincide with the paroxysms of gout, but the two happen alternately: or (what is equally expressive of the connexion between the two forms of disease) the children of gouty and nephritic parents inherit often the one or the other of these maladies; but "which-ever may have been the principal disease of the parent, some of the children have the one, and some the other. In some of them the nephritic affection occurs alone, without any gout; and this frequently happens in the *female* offspring of gouty ancestors."

The urinary concretions to which gouty people are so subject, and the morbid states of their urine generally, belong to the *lithic* diathesis. Dr. Prout holds that "the lithic acid, developed principally during the mal-assimilation of the albuminous textures, may

be considered as the characteristic feature in gout." And the chemical composition of the *chalk stones* which sometimes accompany gout, is in accordance with this statement; and illustrates strongly the connexion between gout and gravel. The so-called chalk stones consist mainly of lithic acid combined with soda; of the lithate or superlithate of soda. Sometimes this very lithate of soda, perfectly white, is deposited in large quantities in the *urine*. Dr. Prout says that he has seen it copiously secreted of the consistence of mortar, so as to block up the urethra in its passage outwards. Now this is just the stuff which is deposited around, and sometimes within, the joints, and which hardens as it collects. I may mention here again that many persons have the gout long, and severely, without having any of these concretions. They are incidental to the more chronic forms of the disorder, in which the pain and the fever, though of long duration and frequent recurrence, are slight in degree. The cuticle at length gives way, and the earthy matter lies bare. A namesake of mine, Mr. Henry Watson, describes, in the first volume of the *Medical Communications*, the case of a Mr. Middleton, who was accustomed, when playing at cards, to chalk or score the game upon the table with his gouty knuckles.

5. Gout attacks especially the male sex. Some few women, however, suffer it, in its regular and decided form: and generally these women are robust and plethoric. Cullen noticed its occurrence in "several females whose menstrual evacuations were more abundant than usual." But the disease chiefly happens in women after the catamenia have ceased to appear. Heberden knew a female who had numerous sores from chalk stones.

6. Cullen observes that the gout does not usually come on till after the *age* of five and thirty. Heberden, who in his long and extensive practice among the higher classes of society in this town saw as much, perhaps, of this disease as any physician ever did, says that he never met with a case which he could decidedly pronounce to be gout, before the age of puberty. Sir Charles Scudamore has collected a statistical account of 515 examples of gout, in which the period of the first assault had been noted. Of these, 142 began between the ages of 20 and 30; 194 between 30 and 40; and 118 between 40 and 50. The greater number, you will observe, was between 30 and 40.

However, I believe that where the inherited disposition is strong, and the habits of living are such as to foster that disposition, gout may shew itself, occasionally, even prior to the age of puberty: but this is, certainly, the exception to a very general rule.

7. Gouty persons are subject to various ailments, which spring from the same fountain as the well-marked paroxysm: derangements in the functions of the digestive organs, of the heart and lungs, of the brain and nerves.

The most familiar of these ailments is indigestion, with its various circumstances of impaired appetite, sickness, vomiting, flatulency, heartburn, acid eructations, gastrodynia. Pains and cramps occur in several parts of the trunk, and shoot thence into the upper extremities, and are relieved by the extrication of wind from the stomach. The bowels are irregular; colicky diarrhoea being sometimes the prevailing fault, but more commonly costiveness. With all this the patient is apt to be excessively dejected and hypochondriacal, morbidly attentive to every bodily feeling, disposed to exaggerate his sufferings, and apprehensive of the worst event.

When the viscera of the thorax are affected, the patient has palpitations, fits of dyspnoea, faintings, or even pangs like those of angina.

In the head occur pain, giddiness, transient affections of the vision and of the hearing, threatenings of palsy and apoplexy.

All these, you may say, are feelings and ailments to which any and all persons are liable. True: but the remarkable peculiarity which connects them, in some men, with gout, is this;—that they often all clear away and disappear upon the breaking out of a paroxysm of that disease in the foot.

Hence such symptoms are regarded as indicating one variety of *irregular* gout. Cullen, led by a questionable theory, classes them under the head of *atonic* gout. Sometimes the patient so affected is said to have *lurking* gout; or *masked* gout.

In another variety of irregular gout, the complaint commences, in the ordinary way, in a joint; but the pain and inflammation do not reach the ordinary degree of intensity, or at any rate do not continue for the usual time and then recede gradually in the accustomed manner, but they disappear abruptly and entirely, while symptoms of severe and alarming disorder arise, as suddenly, in some internal part. This Cullen names *retrocedent* gout. It affords an example, as I conceive, of true metastasis. The internal part most commonly attacked is the stomach. It becomes affected with a peculiar feeling of anxiety and distress; with sickness, vomiting, or violent pain which the patient calls spasm, and which probably is of a spasmodic character. More rarely the retrocession is to the heart, when syncope or urgent dyspnoea ensue; or to the head, when it may terminate in a stroke of apoplexy, or of paralysis.

In a few cases the disorder, thus alighting on some other part than a joint, is plainly inflammatory. The most common example of this is gouty inflammation, with scalding and a puriform discharge, of the urethra; simulating very exactly an attack of gonorrhoea. So also there is a gouty form of ophthalmia, or gout in the eye: gout in the testicle; and a year or two ago an eminent physician of my acquaintance suffered a violent and dangerous attack of what was considered to be gout in the throat. Dr. Cullen speaks of these inflammatory affections under the title of *misplaced* gout: but they may well enough be ranked under one of the preceding heads of masked, or of retrocedent gout.

The disposition to gout may be engendered, and when inherited will infallibly be strengthened and developed, as I have told you already, by certain habits of life: by sensual indulgences, and (but in a less degree, I believe) by want of bodily exercise. Of this we have the strongest negative evidence in the remarkable immunity from the disease enjoyed by the working poor in our rural districts. One never hears of the gout among agricultural labourers. Sir Gilbert Blane states that, during ten years in which he was physician to St. Thomas's Hospital, although in his private practice he reckoned 130 patients who had gout, being about 1 in 26 of the whole number, he had not a single case of it among 2406 patients in the hospital. This I think strange, for in the London hospitals it is not very uncommon for us to meet with gout; but then it is in persons who have lived fully and inactive: in the servants of wealthy families for instance, butlers, coachmen, porters—men who often live more luxuriously, and more idly a great deal, than their masters. And among the rich, those who are most subject to gout are notoriously those who indulge most in what are called the pleasures of the table; who eat largely of animal food, and drink much wine, especially if they are indolent withal. Such men generate for themselves the lithic acid diathesis; and if the gouty tendency happens to have been born with them, they incur that disease, under these habits, with more or less readiness, according to the degree of that innate disposition. Strong exercise certainly *remedies*, in some measure, the evil effects of this mode of life, by promoting the excretions of the body: but gout used to be exceedingly common in the old-fashioned fox-hunter, who “rode hard,” while he also “lived hard.” Mere sedentary habits do not produce gout, as we learn from the comparative exemption of females, and of the poor, who, following

sedentary employments, are yet compelled by their poverty, which is so far a blessing to them, to be temperate. Men who eat much meat generally indulge themselves in drinking also: the two causes go together, and it is difficult to estimate their separate influence. Butchers, who live fully upon animal diet, are said to be rarely affected with gout, but then they necessarily take a great deal of exercise. It appears that the use of wine, and of malt liquors, fosters the disposition to gout much more than the abuse of distilled spirits. The paucity of gouty patients among the lower classes in this gin-drinking town suffices to shew this. I have been told that gout is very little known in Glasgow, where the commercial men live richly, and lead sedentary lives, but do not drink much wine, their favourite beverage being rum-punch, of which they are not at all sparing. Dr. William Budd says that the disease is common among the "ballasters" on the Thames; that, although they are not a numerous body, many are admitted with gout every year into the Dreadnought. Now these men being much exposed to inclemencies of weather, and using great bodily exertion, which is attended with profuse sweating and much exhaustion, think themselves warranted in drinking (besides spirits) two or three gallons of porter daily. This shews the effect of malt liquor in producing the gouty habit of body.

On the other hand, the inbred gouty tendency may be so strong, as to be scarcely kept in check by the most abstemious regimen.

A fit of the gout may be *brought on* by various circumstances: in other words, the possible *exciting* causes of gout are many. A paroxysm has frequently been known to follow immediately upon an unusually severe debauch. Strong mental emotion has sometimes the same consequence, especially emotion of a depressing kind. Excessive fatigue—more particularly fatigue produced by too much walking exercise on any one day—is another exciting cause. And this is unlucky, for it often discourages a patient from again making use of a proper and even a necessary amount of exercise of that kind. Another exciting cause which frequently operates is external injury. The first attack of gout often fixes upon the seat of an old hurt: and a very slight recent injury is sometimes enough to determine a paroxysm—a trifling bruise, or sprain, the pressure of a tight shoe; nay, Dr. Heberden tells us that he verily believes he has seen an attack of gout brought on by the bite of a flea; shewing how easily the disease may be excited, when there is a strong predisposition to it. This it is which makes us so often doubt the

accuracy of gouty persons, when they tell us that they are lame from a sprain.

Dr. Cullen enumerates sundry debilitating circumstances, which, as such, appear to operate in calling into action the gouty disposition. And there can be no doubt that a state of weakness does often favour the eruption of the malady. A friend of my own had lately a most serious attack of continued fever, in the course of which he became hemiplegic, and his life was despaired of. Soon after the fever had left him, and while he was yet extremely feeble, he had three attacks of gout in quick succession.

Pains have been taken by several writers, especially by Heberden, to lay down the distinguishing characters between gout and rheumatism. A first assault of gout can scarcely be confounded with an attack of acute rheumatism. The limitation of the inflammatory redness to one foot, and the restless distress of the gouty patient, contrast strongly with the helpless and motionless condition of the rheumatic, who is pinioned, so to speak, in many limbs. There may be more room for doubt and mistake in the advanced state of gout, when many joints have at length become involved; but even then you may generally decide by enquiring into the history of the patient, and learning the circumstances of his early attacks.

The requisite points of distinction may be broadly and generally stated thus.

In gout the small joints are first and chiefly affected, especially the joint of the great toe: in rheumatism, the large. The redness of the gouty inflammation is more bright and vivid than that of the rheumatic; and the fluctuations between agony and ease are greater and more frequent. Gout usually affects one joint only at a time: rheumatism often many at once. The inflammation in gout is attended with more cedema than in rheumatism; and is followed, in the majority of instances, by desquamation and itching, phenomena which we do not notice at the close of rheumatic inflammation. Gout is not attended with those drenching acid sweats which are so characteristic of acute fibrous rheumatism. The gout is decidedly hereditary: rheumatism, if hereditary at all, is much less distinctly so. The gout occurs rarely or never, whereas rheumatism is not very uncommon, before the age of puberty. In gout, though many functions suffer, there is no tendency to carditis: in rheumatism, with far less general disturbance, that tendency is very marked. Gout is the punishment (some have thought it the privilege) of the rich, of persons who live fully, luxuriously, and idly: rheumatism is most frequently the appanage of the poor, and of those who toil.

CLINICAL OBSERVATIONS  
ON  
DISEASES OF THE SKIN.

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(For the Medical Gazette.)

It is not my purpose to treat systematically of skin diseases, because I have not the materials for illustrating more than a certain number of the species, and because I think it useless to occupy your time and my own with descriptions and pictures, which would make upon your minds no correct impression of what is sought to be conveyed. I do not mean to say that pictorial representations of these diseases might not be made available for the purposes of instruction, but then it would be necessary to have so many to represent the fugitive forms of each affection: and so much knowledge of the disease would be required by the artist, that I almost despair of seeing such a collection accomplished. The nearest approach I know to what it should be, is contained in the portfolio of Dr. Carswell. But even with his accurate knowledge of this class of diseases, and the fidelity of his pencil, it falls very far short, in power of impression, of the living specimen. To the living specimen I propose, as much as I can, to confine myself; and the extent of our course will have reference to the abundance or the dearth of materials.

Our means of illustration, here, extend to about 350 cases annually, independently of an equal number described as eruptive fevers, as many more included under a common term, itch, but probably not more than half that number are cases of true itch; the other half being composed of anomalous cases common to institutions such as this—many depending, no doubt, on the plentiful use of oatmeal. These materials afford abundant opportunities of becoming familiar with the ordinary run, and therefore more important varieties, of skin diseases; but many of the more rare forms of disease do not come under our observation in the compass of a year. The year's list has comprised every species of exanthematous, vesicular, bullous, pustular, papular, and, with the exception of

ichthyosis, squamous disease; and in that list is included all which it is most important for you to know: but at the present moment I may be obliged to restrict myself to erythema, erysipelas, eczema, herpes, impetigo, prurigo, lichen, lepra, and psoriasis; and if I can make you acquainted with these I shall be quite satisfied.

I think people are now becoming sensible that all skin diseases are not to be cured by sulphur, tar, and purging—that even the addition of iodine leaves something still to be desired. I think many are anxious to get a little further into the mystery; your attendance here to-day is proof of that; but still, whilst those who are placed in authority require no attendance upon clinical instructions in cutaneous disease, the vast majority of medical students will go forth, totally uninformed even of the most elementary knowledge of this extensive class of diseases.

To facilitate the acquirement of a knowledge of these affections, certain tolerably natural arrangements or classifications have been made. I say natural, because the elementary lesion is preserved in each species composing an order; but beyond enabling you to determine the order to which it belongs, it does little. Supposing it to be an exanthematous disease, what can be more unlike than a case of erythema nodosum and a case of scarlatina—of varicella and eczema—of small-pox and porrigo? Although we have made some progress when we have ascertained to what order a disease belongs, we must go still further—we must determine the species; beyond this, into the interminable varieties of some authors, the seven varieties of roseola and lichen, and the six of porrigo and impetigo, I neither desire nor expect you to go; when you are familiar with species, you will not be far wrong about varieties.

It will be necessary for me to point out to you the broad distinctions by which you will be able to make out the orders, which are constituted by tolerably well-marked demarcations in the anatomical lesion.

An *exanthematous* disease is characterised by redness, which disappears under pressure; it may be accompanied by tumefaction, and may be resolved with, or without, desquamation of the cuticle. A *vesicular* disease is charac-



terised by a red patch, at some point of which the epidermis is raised by a serous fluid—a vesicle, in fact. The difference in size of the vesicles, the consistency of the fluid, and their general arrangement, create species and varieties. Thus, a bulla is simply a large vesicle. The term *pustule* is applied to collections of pus, formed at the surface of the inflamed rete mucosum: the collection is followed by a scab of varying thickness, and when this falls off, a reddish, indurated, or excoriated surface is presented. A *papular* disease is marked by an hypertrophy, with inflammation, of the papillæ of the skin, never containing fluid, sometimes ulcerating at their summit, more frequently desquamating, but often retiring without the occurrence of either phenomenon. *Squamæ* present exfoliations of the epidermis, upon a reddened, inflamed, and, sometimes, prominent integument. *Tubercula* are small hard tumors, which may ulcerate at their summit, or partially suppurate.

Beyond these orders we shall not enter on the present occasion, and therefore I shall not detain you with the consideration of other lesions.

It may seem to you that it must be an easy matter to distinguish between an exanthematous and a vesicular, a pustular and a squamous disease, and if all were well marked it would be so, but this is often not the case. A patch of eczema may have become chronic, no vesicles are perceptible, and a red desquamating surface is alone presented: this has many a time been mistaken for a patch of psoriasis, and you will not wonder at it presently, when I produce a man with several patches of eczema on the scrotum, the arm, and legs, which have all the characters of psoriasis. The difficulty of determining to what order an affection belongs is caused by the absence of the primary lesion; if there were any vesicles around the desquamating point you would not mistake it for psoriasis. You must therefore not only make yourself acquainted with the elementary lesion, but also the appearance which it puts on when the elementary feature is lost: thus, a vesicle is not followed by a scab, in the ordinary acceptation of that term, unless it has been scratched or otherwise irritated: a pustule is always followed by a scab of

varying thickness and colour. Whenever there is much reason for doubting whether a disease such as chronic eczema be a vesicular or scaly disease, you will, usually, with a little care, succeed in discovering one or more vesicles around the circumference of the patch, and if not, a little increased exercise, or imprudence in diet, will soon make the thing manifest. Still, even when you have a fair knowledge of cutaneous affections, you will find almost endless variety of aspect, depending upon mode of life, constitution, age, and other circumstances.

In a majority of cases which are presented, the anatomical lesions are comparatively simple, and their peculiarities are pretty distinctly marked. But then comes your difficulty—the division of orders into species. Willan made seven varieties of vesicular diseases—three of bullæ, and five of pustulæ; and in many cases the species are divided into varieties so running into each other that they may one day be referred to one variety—the next day, to another. Let us look at eczema. It is *simplex*, *rubrum*, or it may approach so nearly to impetigo, that it becomes *impetiginodes*, and it may happen upon the same patch. Herpes, again, may be *zoster phlyctenodes*, *circinnatus*, *labialis*, *præputialis*, *vulvaris*, *auricularis*, *palpebralis*, *iris*. I doubt whether natural history or medicine has gained any thing by these minute subdivisions: but there is no doubt that they are the stumbling-block to the student. I am prepared to make the way plain for you by striking out almost all varieties which teach you nothing practically useful, fatigue the memory, and make the study of skin diseases wearying and disgusting. There is no other practical good derived from classifying at all, than that of making it easier to the learner to name a disease than might be done without it, and of referring to a book for the remedy which has been found useful.

Now let us come to vesicular diseases. What is their characteristic element? An elevation of the epidermis by a serous fluid: that fluid may be transparent or turbid; purulent or sanguinolent. The vesicles may be large, flattened, filled with a sero-purulent or sero-sanguinolent fluid, and surrounded by a slight red zone, scattered at certain irregular distances from



each other, especially on the inferior limbs; ruptured in a few days after their development, leaving a brownish scab of a conical shape after them. This is the *rupia* of authors. They may be very small, gathered into irregular masses, with a very red cutaneous surface; sometimes drying up, and followed by slight desquamation; at other times, rupturing, and exhaling, for some time, a more or less acrid, yellowish gummy serum, which, as it dries on the part, forms thin scales, accompanied by a burning sensation, and intolerable itching; in its simplest, acute form, when left to itself, lasting under a month; but when terminating in a chronic form, continuing an indefinite time, and accompanied, in that case, by cracks in the skin: this is *eczema*. We may get another form of vesicular disease—the vesicles rounder, larger and better formed, distinct, presented upon a bright-red burning patch, but always more or less regularly grouped in rings, or circular or oval groups; the skin between the different patches being healthy. This form of eruption is almost always acute, and its medium duration three weeks. It does not often become chronic; but in that case it may be indefinitely prolonged. It is distinguished in all cases where its duration is prolonged by the formation of successive crops of vesicles, one crop appearing as the previous one is disappearing; whilst, in the previous species, they are much more simultaneous. In the present variety, there is either a simple desquamation—and then its duration is short—or the vesicle is ruptured, and a thin yellowish or brownish scab follows: this is *herpes*. Besides scabies and *varicella*—both well marked—*herpes* and *eczema* are the prevailing forms of vesicular disease; and if proper regard be had to the preceding description, the distinction will be sufficiently marked. At a glance, then, we can see a mode of making vesicular diseases of easy apprehension. Take the three great varieties—*rupia*, *eczema*, *herpes*. The first is characterized by large separate vesicles; *eczema* by small agglomerated vesicles; *herpes* by somewhat larger, better formed, vesicles in groups. We may follow a similar course with pustules—with papulæ. Thus, what is lichen? It is generally a grouped or agglomerated papular disease. What

is *prurigo*? A discreet papulo-pruriginous disease; the papulæ larger than those of lichen, and not grouped. Look in the same way at squamous diseases. Lichen, as Baumes said, is an annular erythematous-squamous affection.

Let us look to pustular diseases. What are they? *Variola*, *vaccinia*, *ecthyma*, *impetigo*, *acne*, *porrigo*. I put aside the two former, and go to *impetigo*. How is it presented? A red patch, upon which one or many pustules are developed. They may be agglomerated: they may be widely separated. These pustules are ruptured early. Thick yellowish, brownish, or greenish gummy scabs are formed. It continues ordinarily under six weeks: but when it assumes a chronic form, no limit can be set to its duration. When the scab is thrown off, the skin under them is observed to be red. Another scab may be developed at the point without a new pustule. The pustules may be larger; the intervals between them greater; surrounded by a more or less tumid inflammatory circle; sometimes opening speedily, sometimes tardily, followed by a brown scab, often very closely adherent to the part, thrown off after some days, and leaving after it a brownish spot, without ulceration, unless the disease be syphilitic. This is *ecthyma*.

Take *eczema* and *herpes* now, and let us see whether any practical good arises from insisting upon the necessity for knowing the varieties. Is the treatment of one form or another essentially different? Are not the same means applicable to one variety and another? Do we do more in the acute stage than increase our depleting means? Do we do more in the chronic than resort to stimulants? whether in the case of *eczema* the form were *simplex*, *rubrum*, or *impetiginodes*; and in *herpes*, whether *zoster*, *phlyctenodes*, or other. The same may be said of *impetigo*. What is the difference between the *figurata* and *sparsa*? Merely an agglomeration of pustules in the one case; a separation in the other.

Believing as I do, then, that though very minute distinctions are possible, their tendency is evil, by rendering the study of these diseases repulsive at the same time that they are not of material use in treatment, I propose to make you familiar with the broad features of

distinction only, leaving the varieties to be filled up, if you please, by your own after studies.

I do not, however, wish you to neglect any opportunities of acquiring the power of diagnosing these diseases. It surely is desirable to avoid the mistake of saying, what is daily done, that a case is scabies, whilst it is really eczema, prurigo, or even lichen; that a case is syphilitic, and the patient subjected to a mercurial course, when it has no such feature. That you will occasionally meet with great difficulties in diagnosis, I will immediately convince you. I will shew you a case of scabies which will appear to you to be exactly like a case of eczema. Here they are: both vesicular, both presenting similar general features, both seated between the fingers. How are you to set about the diagnosis? The eczematous vesicles are flattened, usually agglomerated, and more or less numerous. Here they are separate, pointed, and the itching is rather pleasant than otherwise; whilst, in eczema, the sensation is that of stinging.

We must often in those cases use the mode of reasoning by exclusion. Take a case of scabies—the vesicles developed—we at once see that the disease is vesicular; but, then, we know that there are several vesicular diseases. How are we to judge between them? It is not miliaria nor varicella: both these affections are accompanied by some constitutional disturbance: besides in miliaria the vesicles are globular; in varicella they are larger and more inflamed. It is not herpes; because its vesicles are arranged in groups: here they are separate. We have now only to choose between eczema and scabies; and the reasons before given will enable us to decide. The same reasoning will often be found useful when the elementary lesion has disappeared. Here is a case, and obstinate enough it has proved, of impetigo sparsa; but there is no single pustule at present perceptible. You see over the arms and legs, more particularly, yellowish and brownish, thick rough scabs. You see at certain points, where they have been removed, that they leave behind them, in some places, a slight ulceration. Now, although you are satisfied that the disease was pustular, you may be unable to decide at the moment the species to which it

belongs. We at once exclude variola and vaccinia: their characters are distinct enough: it is not ecthyma, because its pustules are large; its scab is black and adherent, and it almost always leaves an ulcer after it. It is not acne or mentagra: their pustules more commonly end in chronic induration than true scabs. We have now only to determine between porrigo and impetigo. Porrigo has a cup-shaped brimstone-colour scab, and is usually seated on the scalp; it is, therefore, impetigo, and, from its scattered form, is termed sparsa.

Skin diseases are presented to our notice as simple local affections, occasioning little or no constitutional disturbance, of which itch and ichthyosis are examples; or they may be consequences of constitutional disturbance; and in the treatment this is a matter of first-rate importance to determine. Except in a very few instances, they are accompanied by inflammatory action at the part, the nature of which is frequently not very evident, and its results are almost as variable as the part in which it is situated, the cause which has produced it, and the constitution of the individual. It must be evident that, where the results are so variable, the inflammatory action must often have something specific also; and that the influence of this character will determine the particular form of the disease. For instance, the suppression of an habitual evacuation, hæmorrhoidal, for instance, will in one person be followed by eczema, in another by psoriasis or lepra: here the constitution of the individual impresses the character: the exciting cause is the same in each: the mode of treatment is also the same. The reappearance of the hæmorrhoidal discharge would probably make the treatment of either a very simple matter. But the cause may be unknown: the disease may be idiopathic: it may be dependent on an inherent morbid disposition in the skin itself, and apparently independent of any disturbance in the rest of the system; then the treatment is reduced to a simple empiricism. It was only by the inspiration of empiricism that the fact could have been discovered that sulphur was the remedy for the itch.

We may have discovered the cause of a disease—psoriasis, for instance—in a disordered condition of the alimen-

tary organs. We may apply our remedies to those organs, and restore them to a state of health ; but the cutaneous affection persists. And local remedies are found to be necessary for the cure of a disease—which has originated in a deranged function of an organ—which we have successfully treated. You see, then, how important it is to ascertain what is the exciting cause.

The particular morbid action which is set up in the skin, and which constitutes the disease, may, as we have seen, be set up under the influence of some external cause ; and may be kept up by the continuity of action of this cause ; so that, the cause ceasing, the disease will disappear. Of this class are such contagious affections as are due to an agent, not in the first instance absorbed, and afterwards manifested secondarily, as may occur in syphilis, but which, when deposited on the skin, excites there a particular and characteristic eruption. The itch insect, and the matter of favus, are good examples of what I mean.

The skin disease may be the reflection of a disease in an internal organ : its shadow, as it were ; and these are the most frequent ; though if the internal disease be masked, it may be overlooked ; and it is then said there is no apparent cause for the cutaneous disease. It may be the effect of a reaction consequent upon a disturbance of the nervous system, though no evident affection of that system may be presented. A few days ago I was asked to see a lady who had discovered her husband in an equivocal situation, with her own maid, and in whom the shock produced, within half an hour, a plentiful crop of herpes—like vesicles all over the body. The ingestion of particular articles of food has often an almost magical effect in developing cutaneous eruptions : in particular individuals, oysters—in others, muscles, lobsters, mushrooms, almonds, vinegar—will cause in a few minutes an eruption to cover the surface of the body. In poorhouses, where oatmeal porridge is a common article of food, and in Scotland particularly, a kind of bastard itch is developed by it. I have lately learned that a plentiful use of cabbage is a speedy means of getting rid of it. In certain eastern countries, the habitual use of pork tends to produce cutaneous disease. By many persons it is thought that tubercular

lepra is caused by the use of pork as a common article of food. I conclude that it was a knowledge of this fact which induced Moses, and afterwards Mahomet, to interdict the use of this food. The Baron Larrey says, that even fresh pork exercised a deleterious influence on French soldiers in that country ; that many were in 1799 attacked with tubercular lepra. There is no doubt that many substances habitually used as food have a marked influence on the skin, and when abused the effects are more marked. But there are also skin diseases which are caused by the absence of stimulants. *Gutta rosacea hydropotiarum* is, I believe, an example in point, and it is cured by gently stimulating the digestive system. Copaiba, belladonna, and certain other medicinal substances, are also capable of causing cutaneous disease. So also is the approach of puberty and manhood : the latter especially is the age of acne. The critical age of woman is often that of rosacea.

There are certain affections which are very much confined to particular periods of life : thus eczema of the scalp and porrigo, as well as impetigo, are, very much, diseases of childhood : so are also measles, small-pox, and scarlatina. Acne is the disease of adolescence, prurigo of old age—it may, however, occur in childhood.

Particular occupations have their particular diseases : bakers have a species of psoriasis ; firemen and cooks are the victims of eczema. The seasons again exercise a very remarkable influence in the production of their affections : “spring and fall,” but particularly the former season, are the periods when they are rife. Rupia, ecthyma, and pemphigus, are too often the result of misery ; so also is favus.

Skin diseases, if we except small-pox, erysipelas, measles, and scarlet fever, have little tendency to destroy life ; though they frequently occasion the greatest inconvenience. At the same time, we must not lose sight of the fact, that they will be materially influenced by the state of the system : an attack of acute eczema may terminate in a chronic form ; and, beyond the annoyance, it may have no serious influence upon a healthy person in the prime of life ; but let it happen to an aged and broken man, it will deprive him of sleep, and eventually wear him out : a

case of this kind came lately under my observation. In expressing your opinion upon a case bear these things in mind. Bear also in mind what is the ordinary duration of these affections; it will save you from much annoyance. I often see elderly persons with chronic eczema of the leg, accompanied, or not, by ulcers; the medical attendant promises a speedy cure; you will know that the disease may baffle you for months or years, and you will therefore hold out no such delusive hopes.

Again, the knowledge of the ordinary duration of a disease when left to itself, is important in another point of view: it will prevent unnecessary meddling. A case of herpes circinnatus, for instance, left to itself, lasts, unless there be a fresh crop of vesicles, three weeks. There are two remedies in common use in such cases; ink, and lunar caustic. The disease gets well under their use, not in three weeks, as it might if left to itself, but perhaps in six; the remedy gets great credit because it got well under it, while the disease might have got well in half the time if left to itself. I might give you other examples of the same kind, but it is unnecessary. I do not mean to say that when a mother sends for you to see her child suffering from herpes, you should appear to do nothing: she would be dissatisfied, and send for some one else; therefore it is necessary to appear to be doing something—all I wish to inculcate is the avoidance of mischievous meddling.

It seems to me that this mode of looking at skin diseases is most natural; their etiology is at once unmasked, the causes are evident, and their direct or indirect influence is apparent. Much confusion is in this way avoided, and the study of these diseases rendered comparatively simple.

In treating these affections, we must recollect that, although it be discovered that a particular organ may have been the starting point, yet it will happen that the excitement may be extended to the whole economy, may particularly affect the nervous system, may have produced changes in the constitution of the blood, and it may be necessary to go beyond the original seat of mischief—the stomach, or other organ—to cure the disease. In fact, if we carry out that train of reasoning, we see that moral causes, the abuse of excitants,

cold, heat, and other agents, may produce skin disease, either by primarily affecting a particular internal organ, and sympathetically the skin, or in producing a general excitement of the system, which may ultimately fall on the same organ.

Let us for another moment reflect upon the different causes of the affections in question. They may act directly upon the skin; and all which may be necessary for the cure of the disease is to suppress the cause, and to dissipate the action it has set up in the part. The disorder of an internal organ may be the determining cause of the affection; then we have to treat the disordered internal organ. It may be a suppressed discharge, which had become almost habitual: nothing is more common than to find eczema developed as a consequence of the attempt to cure old ulcers of the legs: here a restoration of the discharge often makes the treatment of the cutaneous affection simple, and so on.

In the absence of any apparent cause, and this case is rare, the affection is regarded as independent of any thing passing in the organization; and here the treatment may be limited to the skin itself. It may be a mechanical or chemical destruction of the diseased part: it may be by substituting one diseased action for another, presuming always the vicarious action to be the most easily cured; it may be by modifying the diseased action, so as gradually to restore it to a healthy action. Many means are suggested to the mind as commonly and empirically used for the purpose: where the action has become very chronic, blisters, ointments containing tartar emetic, sulphur, tar, iodine, mercury, and other substances, are used to modify the action. In such cases it is common to administer internally cantharides, arsenic, and other powerful remedies, which will often quickly exhibit their good effects on the skin disorder, but which will not unfrequently leave traces of their injurious effects upon the digestive organs, which may be much more serious than the disease for which they were administered. But there are other means of acting upon the skin: we may increase its exhalant action by baths of various kinds, and by various internal remedies. The use of this means is often very great, especially in squamous



and papular diseases, where the skin is usually harsh, and cutaneous transpiration almost extinguished. Still, whatever internal organ has had its function disturbed, however important it may be to treat that organ, it is most important to second the treatment by local means. I quite admit that, in a majority of cases, the local treatment is only palliatory, and that we must look to the general treatment for the radical cure. If, by removing all internal disorder, the skin affection be reduced to a simple local disorder, then local treatment is the plan indicated.

Such are the general remarks I have thought it well to make before I enter into the consideration of the several diseases which will form the subject of my lectures: that they are very general is quite true, but they seemed to me necessary to a proper comprehension of what is to follow.

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ON SOME PECULIARITIES  
IN THE  
CIRCULATION OF THE LIVER.\*

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(For the Medical Gazette.)

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SOME late observations on the effects of the actions of respiration on the circulation of the blood in the venous system, have drawn me to consider the very peculiar position of the liver in respect to the motions of the diaphragm and chest, in breathing. I propose to show that the current of blood in this organ is subject to the influence of the alternate expansion and contraction of the thorax during respiration; and that the general effect of these actions is to assist its flow from the liver to the heart.

That some auxiliary force should be employed to promote the return of blood from this gland, might, perhaps, be anticipated by any one who reflects on the peculiar mode in which the circulation is performed in the liver. It is well known that the office of elaborating the bile is assigned to a blood-vessel, which, formed originally from the venous system, assumes the characters of an artery. The *vena*

*portæ*, although nothing more than the common trunk of a certain set of veins, and presenting the same structure as the veins generally, when it reaches the liver, subdivides, like an artery, into numerous ramifications: and the blood which it has collected from the abdominal viscera it transmits, like an artery, first over the whole substance of the gland, and then onwards to the right side of the heart. It is to be remembered, also, that the abdominal veins, of which the *vena portæ* is the trunk, do not possess valves to protect them from regurgitation of the blood, like the veins in other parts of the body. This vessel, accordingly, without any provision for increasing its power, or any assistance beyond that *vis à tergo* which belongs to the veins generally, has to perform the same duties which arteries usually fulfil: and the arteries, I need scarcely say, besides receiving an impulse from the heart, are aided in distributing their blood, by the contractility and elasticity of their coats. Consequently, when we consider the feebleness with which the blood must be sent through the gland by the portal vessels, and how the minute structure must be exposed to the dangerous effects of congestion, it is natural to expect that some additional force should be brought into operation to accelerate the current.

The influence exercised by the actions of breathing in aiding the flow of blood to the heart has hitherto been studied principally in reference to its effects upon the veins of the upper part of the body. It is a familiar fact, that each time that the chest is expanded during inspiration, the blood is carried with increased velocity along the veins of the neck to the heart; and when expiration takes place, a temporary retardation occurs. This is exhibited most distinctly in excited respiration. It must have been generally observed, that during a prolonged and forcible act of expiration, as in coughing, sneezing, blowing the nose, or dwelling for a long time on a single note in singing, the skin of the head, face, and neck, becomes suffused and red, and the veins of the temple, forehead, and neck, turgid with blood: and it must also have been perceived, that when an inspiration was made, these appearances at once ceased.

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\* Read before the British Association, June 24th, 1842.



The explanation of these phenomena may likewise be said to be well known. It is to the late Sir David Barry that we are chiefly indebted for the more decided experimental proofs on which it rests. During the act of drawing a deep breath, not only is that part of the chest in which the lungs are lodged dilated, but the space where the heart is situated has also its area enlarged. The membranous capsule which surrounds the heart, viz., the pericardium, is attached in such a manner to the vessels at the upper part of the thorax, on the one hand, and to the convex surface of the diaphragm below, on the other, that each time that this great muscle of inspiration, by the combined action of its lateral and inferior parts, descends towards the abdomen, its parietes are stretched, separated from each other, and held apart: consequently, the dimensions of the cavity formed by the heart-purse undergo a general increase. But this dilatation cannot take place without the disposition for a vacuum to form in the cavity. Hence the blood accumulated in the venous trunks close to the heart, rushes, in consequence of the atmospheric pressure, to the right auricle with accelerated force. When the heart has been filled to its natural amount, the danger of over-distension is prevented, by the parietes of the pericardium, in proportion as the diaphragm continues to descend, becoming more and more tense, and thereby closing upon the heart, and giving it due support. As soon as expiration succeeds, the cavity around the heart is diminished in capacity; owing to the simultaneous descent of the ribs and ascent of the diaphragm, it is compressed to a certain degree; and the current of blood in the venous trunks is either retarded simply, or regurgitates, according to the force of the expiration.

Such is a general account of the manner in which the blood flowing by the veins to the heart is affected in its course by the mechanism of respiration. But it has not occurred to me to find in any work that I have consulted on the subject the same views applied to the circulation of the liver. Yet, when we consider the relative position of this gland to the chest, and more particularly its proximity to the part where there is a tendency for a vacuum to be

produced during inspiration, it appears beyond question that the influence which the motions in breathing must have on the blood in the liver will be of great importance. In short, I think it admits of being proved, that the additional force communicated to the current of blood discharged from the liver by the actions of respiration, facilitates the circulation through the gland to such a degree as to compensate for the weakness of the power by which it is impelled by the vena portæ.

These propositions will, I trust, appear more manifest when we attend—

First, to the exact point at which the venæ cavæ hepaticæ enter the thorax, to empty themselves into the heart.

Secondly, when we observe the peculiar structure of these vessels. And,

Thirdly, when we reflect on the changes to which the orifices of the venæ cavæ hepaticæ are subject, in the different relative positions of the diaphragm and liver, during inspiration and expiration.

First: as regards the place where the hepatic veins fall into the vena cava inferior. Every one who has ever witnessed a post-mortem examination must know that it is just at the point where the lower vena cava pierces the central tendon of the diaphragm to enter within the thorax, that the venæ cavæ hepaticæ join this large vessel. The trunks composing the latter veins may, indeed, be said themselves to perforate the diaphragm: for it is owing to their junction with the vena cava inferior, at the exact point where it passes through the central tendon, that the opening has an irregular triangular appearance, pointed out in the demonstrations of the diaphragm. Accordingly, the orifices of the veins of the liver open into the inferior cava just where this vessel is properly within the cavity of the pericardium, and is about to fall into the right auricle of the heart. When, therefore, the cavity is enlarged by the elevation of the sternum and descent of the diaphragm, and the disposition for a vacuum to be produced occurs, the blood will flow with increased velocity through these openings, into the inferior cava. It will be drawn, or sucked, out of the venæ cavæ hepaticæ, as if by the force of a pump, and discharged almost directly into the heart.

Secondly: we must attend to the structure of the veins of the liver. That, we shall find, corresponds with the views just expressed. The *venæ cavæ hepaticæ* are formed in such a manner that their parietes cannot collapse when subjected to atmospheric pressure.

I am not aware that a satisfactory explanation has yet been presented by any one of the design of the peculiar formation of the veins which return the blood from the liver. In order to understand the subject properly, we require to consider what would be the necessary effect of vessels, whose coats consisted of the same thin membranous structure that belongs to veins generally, being exposed to the weight of the atmospheric pressure, at a point near to where they empty themselves into the heart.

It may be known to many of the members now present, that a physiologist of eminence, whose opinions claim respect, Dr. Wilson Philip, communicated a paper to the Royal Society\*, in which he endeavoured wholly to overturn the theory, that the circulation of the blood was assisted by the actions of respiration. And the main argument on which he rested his opposition was the following:—He maintained that if, during the act of inspiration, there was a disposition for the formation of a vacuum in the cavity where the heart was lodged, the first effect upon the veins external to that cavity, and whose orifices opened into it, and discharged their contents into it, would be, that their walls would become collapsed. He argued that, instead of being rigid, like tubes connected with a machine for raising water, the veins close to the heart are yielding and pliable in their coats; and if any such vacuum as the theory supposed was really produced during inspiration, the weight of the atmosphere would cause their sides to fall together, so that the course of the blood would be retarded instead of accelerated at those periods.

This objection appears, at first sight, a cogent one; but, powerful as it may seem, it does not affect the validity of the theory, either as respects the veins of the neck, or those to which I particularly claim attention, viz. the veins of the liver.

Before proceeding to speak further of the latter veins, I may be allowed to describe shortly the provision in the neck by which the veins in that situation are protected from atmospheric pressure at the time when the vacuum tends to be produced within the thorax, and their blood flows more rapidly to the heart.

This subject has lately been put in an interesting view by one for whose recent loss many will join with me in feelings of the deepest grief. Not doubting, from numerous observations, that the blood is urged to the heart through the veins of the neck with increased velocity during the act of inspiration, but being dissatisfied, on grounds similar to those brought forward by Dr. Wilson Philip, with the explanation commonly given of the fact, Sir Charles Bell endeavoured\* to show how these veins are defended from the effects of atmospheric pressure during the expansion of the chest. This he has done by directing attention to the relative position of the vessels to the muscles adjoining them, and to the actions of these muscles during inspiration.

It is well known to anatomists that each of the great venous trunks which convey the blood from the head, viz. the external and the internal jugular veins, is covered by particular muscles. The external jugular vein lies under the fibres of the broad muscle expanded over the side of the neck—the *platysma myoides*; and the internal, under the *sterno-cleido-mastoideus*. Now when the chest is elevated in the act of drawing in the breath, these muscles are in a state of contraction. This is a fact about which there will be no doubt, if we only observe the appearance of the neck in a looking-glass, when we inspire. It follows, therefore, that the fibres of the *platysma myoides* and of the *sterno-cleido-mastoideus* are in a rigid condition during the act of inspiration; and they will effectually shield the veins beneath them from the weight of the atmosphere, at that time.

But this is not all. Another interesting effect results from these two muscles becoming contracted at the time of our making an inspiration. We have to notice that, while the chest is expanded, the sternum is protruded, and the

\* Phil. Trans., June 1831.

\* In his Practical Essays, Part 1.

clavicles and shoulders raised. This may not be very distinct in natural easy breathing; but it is sufficiently apparent in more violent respiration. Now when the sternum and clavicle are advanced and elevated, while at the same time the platysma myoides and sterno-cleido-mastoideus are in a state of contraction, what, let me ask, will be the condition of the space beneath these muscles, in which the venous trunks are situated? Is it not evident that as the muscles are inserted into the sternum and clavicle, they must participate in the movements of the bones, and their planes become more distant from the spine, in correspondence with the protrusion of the sternum and clavicle? That such a rising or swelling of the lower part of the sides of the neck does really take place, during the act of drawing a deep breath, we may easily satisfy ourselves by placing our thumbs above the clavicles when so doing; or it may even be made more manifest by applying the ends of a pair of callipers to the lateral parts of the neck, and observing, on the index, how the blades are separated during each inspiration. But such a protrusion of these muscles cannot take place without the area of the part beneath them, occupied by the veins, being increased in its dimensions; and, again, it is obvious that this expansion must cause the disposition for a vacuum to be produced in that space. Accordingly, in the part of the neck where the venous trunks are imbedded, a process takes place during respiration analogous to what is carried on in the thorax. At inspiration, when a vacuum is produced in the chest, and the heart and great vessels are relieved from pressure, the platysma myoides and sterno-cleido-mastoideus are raised from the veins of the neck, and defend them from collapsing under the weight of the atmosphere: but, more than this, owing to the particular motion of these muscles, a vacuum is formed at the same time in the site of the great veins, which has the effect of drawing the blood from the lesser vessels, with increased force, into the larger trunks, and thereby facilitating the circulation\*. During expiration, when the

passage of the blood to the heart is retarded from the contraction of the chest, and there is a tendency for it to regurgitate, the muscles of the neck, becoming relaxed, subside in correspondence with the sternum and clavicle, diminish the space occupied by the veins, compress them to a certain degree, and prevent the reflux of the blood.

I have been induced to dwell thus, at some length, on the mechanism in the neck by which the condition of the veins is accommodated to the changes consequent on respiration, from thinking that it would tend to point out more clearly what provision was required, for a similar object, in the vessels of the liver. If it be granted that, owing to the relative position of this gland to the cavity of the pericardium, the veins which discharge its blood into the heart are subject to be affected by the vacuum produced in that cavity during inspiration, it appears a necessary condition that these vessels should be rendered capable of resisting compression from the weight of the atmosphere. Now there can be

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how the atmospheric air should be drawn into the veins, in operations upon the neck. No one seems now disposed to deny that, in removing tumors from the neck or near the shoulder, air is occasionally admitted into the trunk of a wounded vein, and is the cause of the sudden and appalling death of the patient. The explanation formerly given, that the air was drawn into the opening in the vein, by the influence of the vacuum formed in the cavity of the pericardium during inspiration, was obnoxious to this objection—that if the suction originated in the chest, the weight of the atmosphere would compress the wounded vein situated external to the cavity, and shut the orifice so effectually as to prevent any air being introduced. But if we suppose that, by the action of the muscles which has been described, a vacuum may be produced in the neck itself during inspiration, and that the patient, under the stimulus of pain, takes a deep and long breath after an opening has been made in one of his veins, we can easily understand how the air may rush into the orifice, produce the whizzing sound described by those who have met with such cases, and occasion death.

It may be added, that in the same work which contains these observations, Sir Charles Bell has made another ingenious application of the principles on which they are founded, to explain a difficult subject in physiology. It has perplexed physiologists not a little to account satisfactorily for the force by which the fluid contained in the thoracic duct is propelled, and more particularly to comprehend why it should take the peculiarly long and remarkable course which it does, to fall into the venous system at the junction of the internal jugular and subclavian veins. When we now consider that, in the part of the neck where it terminates, a process of suction, like that of a pump drawing water, is continually taking place, and that the duct is provided with valves to prevent regurgitation, it will assist us in solving both these questions.

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\* The author whose opinions I quote has applied these views concerning the actions of the muscles of the neck to the solution of an interesting, and heretofore an obscure question; viz.

no doubt, in my mind, that the peculiar structure which characterizes the *venæ cavæ hepaticæ*, and the abrupt manner in which they open at once from the solid substance of the liver into the cavity of the pericardium, have a direct relation to the power of suction acting in the chest.

The hepatic veins are lodged in canals, which are cut, as it were, out of the firm substance of the liver: and what particularly demands attention, is the fact, that, between the glandular structure composing the walls of these canals, and the proper coats of the veins, no loose cellular membrane is interposed. On the contrary, the outer surfaces of the veins adhere directly to the secreting part of the liver. Hence it follows that these vessels approach, in their character, to the nature of rigid tubes. Owing to the want of cellular membrane around them, it is impossible for them to collapse; and their sides can only approximate to the extent to which the natural structure of the gland will permit the canals lodging them to meet. It is in consequence of this peculiarity, that, in making a cut into the liver, we find it easy to distinguish the *venæ cavæ hepaticæ* from the portal veins, which occupy similar canals. The latter veins are surrounded by a bed of cellular tissue connecting their external surfaces to the walls of the canals, and to the vessels which accompany them; and being thus loosely adherent, they fall collapsed, when emptied of their blood: but, as the hepatic veins adhere firmly and closely to the interior of their proper canals, their orifices, when cut across, do not close; and they are readily recognised by their patulous mouths. This rigid and open appearance of the *venæ cavæ hepaticæ* is more remarkably seen at the base of the liver, where they pass out in large trunks to join the inferior cava: at that part their orifices are so wide and uncompressed, that, when cleanly cut, one can even look a considerable way down into the very interior of the gland along their open channels.

I conceive, then, that there is a manifest design in the veins which discharge the blood from the liver into the heart, being of the nature of rigid tubes. This gland, lying in close proximity to the chest, is equally supported on all its sides by the pressure

of the abdominal muscles—the diaphragm, and the abdominal viscera: its texture is of such firmness, that the venous trunks which traverse it, from having their walls formed of its solid substance, are calculated to remain patent under this equal compression: it accordingly follows, that when the vacuum formed during inspiration in the pericardial cavity, with which the veins immediately communicate, takes place, the blood accumulated in them is drawn or sucked into the right auricle of the heart without their sides collapsing; and an increased impetus is thus given to the whole circulation of the gland.

Thirdly: I beg to draw attention to the effect which is produced upon the hepatic veins, in their passage through the diaphragm, from the liver to the heart, by the alternate contraction and relaxation of this muscle in inspiration and expiration.

As the hepatic veins, in order to escape from the abdominal cavity into the thorax, pass through the central tendon of the diaphragm, and as, during the successive actions of inspiration and expiration, a remarkable change occurs in the relative position of the liver and that muscle, it is natural to expect that some alteration should be produced in their calibres at these periods—that during one of the actions, they should be of greater diameter than in the other.

Such, upon examination, will be found to be really the case. And it will be seen that the condition of the openings corresponds with what might have been looked for, on the supposition that the views which I have presented are correct, as to the design of the peculiar structure of the *venæ cavæ hepaticæ* being to allow the blood to be accelerated in its progress by the suction within the chest.

Let me point out, first, the effect which will be produced on the dimensions of the opening, by the contraction of the diaphragm in the act of inspiration.

It must be remembered that the muscular fibres of the diaphragm converge towards the cordiform tendon, so as to be inserted into it in all different directions. It follows, therefore, that when they contract, they will draw upon the tendon, in an equal manner, from numerous distinct points: now the effect of this will be, to stretch and



unfold it over the smooth convex surface of the liver with which it lies in contact. But the necessary consequence of bringing the tendon into this state of tension will be, to dilate the opening through which the *venæ cavæ hepaticæ* pass, to the greatest possible amount of which it is capable. Accordingly, during that act of respiration in which we have formerly seen that a disposition exists for a vacuum to take place in the chest, and by which the blood collected in the liver tends to be drawn with accelerated velocity into the heart, the orifice in the diaphragm, which gives passage to the blood, is held widely open, to facilitate the flow of the stream.

But there is another circumstance which deserves our notice, as contributing to the same end. During inspiration, when the ribs are elevated, thereby taking their weight off the liver, and the diaphragm descends, thrusting the gland downwards, the substance of the gland undergoes a certain flattening or lateral expansion; and at the same time it recedes somewhat from the situation of the heart. The effect of these changes upon the venous trunks in the interior of the liver may readily be comprehended. They will render their course more direct; or adjust them so as to be in a more favourable position for allowing the blood to pass easily along their channels\*. Accordingly, we have here an additional provision for giving greater freedom to the egress of the blood, at the period when the suction within the chest comes into operation, so as to draw it with increased force out of the depths of the liver.

I will attend, in the next place, to the condition of the opening in the diaphragm, when expiration takes place. This, it will be seen, is quite different from what exists in inspiration. As in the act of expelling the air the fibres of the diaphragm are relaxed, it follows that the central tendon will become loose and flaccid at that time: consequently, the borders of the opening for the transmission of the hepatic veins

will approximate, and its diameters be diminished in every direction, so as to render the opening smaller.

But another circumstance has to be noticed. As the diaphragm relaxes, and the liver recedes in the direction of the thorax, the trunks of the veins, between the liver and the heart, are shortened, and their coats are more or less thrown into folds. Now the consequence of this puckering of the veins will be, to produce a certain impediment to the course of the blood through them at that time.

And yet this is not all. It happens that, during the act of expiration, the surfaces of the liver and of the diaphragm shift to a certain degree upon each other; points formerly in apposition cease to correspond exactly with one another. The result of this change of relation is, that an important alteration takes place in the course of the trunks of the hepatic veins: it causes them to pass from the liver to the heart in an oblique, instead of in a direct and straight course. In other words, the orifices of the hepatic vessels no longer face the opening in the tendon of the diaphragm; but a portion of the tendon overlaps them, so as to close them by a kind of valvular septum, to a greater or less degree.

Now the obstruction in the channel for the blood between the liver and the heart produced by the causes just mentioned, is in accordance with the views which it has been the object of this paper to present. At the period of expiration the cavity of the pericardium is in an opposite condition from what it is during inspiration; in common with the rest of the chest, it is contracted in size; and the heart is consequently compressed to a certain degree. But the necessary effect of the heart being compressed when distended with blood would be, that a regurgitation would take place into the interior of the liver. Owing to the rigid structure of the *venæ cavæ hepaticæ*, and the open state of their mouths in emerging from the gland, the blood would find easy access into them, were they not guarded by a particular provision. As during an act of violent expiration we observe the face turning red or purple, from the reflux of the blood into the veins of the neck, so we should have the blood returning with a corresponding impetus by the hepatic veins into

\* The process is not unlike what occurs in the mamma during suckling. Previous to the infant applying its lips to the nipple, the lactiferous tubes are disposed in a zig-zag or tortuous form; but when the nipple becomes erect, the effect of the action of sucking is to elongate and straighten the tubes, and so facilitate the flow of the milk from the mamma.



the liver, to the imminent danger of destroying the delicate structure of the lobules composing the gland, if it were not so arranged that at that moment the venous trunks are shut, and by that means the current is arrested\*.

Thus it has to be concluded that the changes in the relative position of the liver and diaphragm, and of the openings for the hepatic veins, occurring during respiration, have a manifest reference to the operation of suction which takes place in the chest during inspiration. When, by the expansion of the thorax, there is a disposition for a vacuum to form in the cavity of the pericardium, and the atmospheric pressure acting on the liver impels the blood with accelerated velocity towards the heart, the channel for the transmission of the blood is wide and direct; but when, from the contraction of the chest in expiration, the heart is compressed, and the blood is in danger of regurgitating into the open canals of the hepatic veins, the calibres of the venous trunks are diminished in size, and their mouths partially closed.

Accordingly, as it is an admitted fact that, in comparing the act of inspiration with that of expiration, the former implies a more powerful and positive operation than the latter, it follows that the circulation of the liver gains by the influence of the atmospheric pressure. The power of suction in force during inspiration, not merely countervails the impediment which we have shown to occur at expiration, but by the direct and effectual aid which it gives to the stream of blood in the hepatic veins, it relieves the system of portal vessels of a duty which would otherwise be disproportioned to their powers, and thus promotes the circulation of the gland generally.

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\* I may refer here to a somewhat analogous provision in the veins of the interior of the eyeball, for guarding the delicate textures of that organ from the effects of regurgitation of the blood during expiration. In a paper communicated by me (Oct. 1837), to the LONDON MED. GAZETTE, I have endeavoured to shew that the vorticose form of the veins ramifying on the choroid coat was designed to break the force of the returning current of blood when a reflux took place in sneezing, or other forcible acts of respiration.

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ON MR. STAFFORD'S TREATMENT  
OF  
STRICTURE OF THE URETHRA.

BY WILLIAM COULSON,  
Surgeon to the Magdalen Hospital, &c.

(For the Medical Gazette.)

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CASES of stricture occasionally occur, which the ordinary plans of treatment fail to relieve or cure. These cases may be arranged under three or more classes: the first, in which there is simple stricture of the urethra, so complete, however, as sometimes to cause retention of urine; the second, in which two, three, or more inches of the urethra, are thickened and contracted, and often complicated with fistulous openings in the perineum; the third, in which one or more bad strictures exist in an extremely irritable urethra, which is frequently combined with an irritable state of the whole system.

The three following cases illustrate these three classes, and at the same time demonstrate the efficacy of Mr. Stafford's treatment, when all other plans had failed. The first case is drawn up by Mr. Grove, surgeon, of Wandsworth, to whose unremitting attention the patient is under the deepest obligation.

CASE I.—Mr. R., æt. 50, wine-merchant, dates the inconvenience arising from the stricture of his urethra at twenty years back, when he was first affected with retention of urine. The introduction of the catheter relieved him, and several years elapsed before his attention was again called to the disease, micturition having been natural, or nearly so, during the interval. From this time Mr. R. sought the aid of various surgeons eminent for the treatment of stricture, and till latterly with relief, when the smallest instrument could not be passed even by an expert manipulator. The urine, however, still flowed, but often only *gut-tatim*.

In September 1840 he placed himself under my care, with gouty symptoms, which were removed by medicine. A very copious mucous deposit still remaining in the urine, led me to inquire more particularly into the state

of the bladder and urethra, when I discovered the existence of a stricture, and learned the above facts. I at once proposed the cure of the stricture, as a means of remedying the diseased state of the bladder.

Having obtained my patient's consent, I endeavoured to introduce a small-sized catheter, afterwards bougies of various sizes, but with no other result than entering the stricture; a passage through it being unattainable by the utmost perseverance. No blood escaped, nor did any laceration accompany my efforts. On many subsequent occasions, and at short intervals, I renewed my attempts, and the result was an enlarged stream of urine. Press of business, and the much improved state of Mr. R.'s health, induced him to decline any further proceedings in reference to the cure of the stricture, and he continued for some months apparently in good health. Having calculated too readily on immunity from an attack of retention of urine (which I informed him was likely to occur), he became less careful in his mode of living than prudence would suggest, and the result was a fulfilment of my warning. His symptoms on this occasion became very alarming, and I requested the opinion of Mr. Coulson, who prescribed sedatives with salutary effect, the urine passing away by degrees until the bladder was relieved. Mr. C. then recommended the employment of caustic bougies, the use of which was followed by an improvement in the stream of urine. The same causes as before operated in inducing Mr. R. to decline pursuing any remedies; warnings were unheeded, and again retention resulted.

Mr. Coulson was again consulted, and was unable to introduce the smallest instrument into the stricture. The retention had existed four days, the bladder was considerably swollen, and the patient was in great distress. Mr. C. then determined on puncturing the bladder through the rectum. The operation was performed on the night of March 2d, this year, and five pints of dark-coloured urine, resembling coffee in appearance, were drawn off. The canula was retained in the bladder, and the urine drained through it for five days, when the canula came out during evacuation of the fæces.

While the canula was in the bladder, the cure of the stricture with the armed bougie was tried, but without success. The accumulation of urine again took place, and Mr. R. was now persuaded to submit to Mr. Stafford's operation of cutting through the stricture. The operation was performed by Mr. Stafford, in the presence of Mr. Coulson and myself, on the 11th of March. It may be described in a few words. An armed catheter, No. 8, was passed down to the stricture, the lancetted stilette pushed forward twice, the stricture perforated, and a No. 4 silver catheter immediately introduced with perfect ease after the withdrawal of the armed catheter. Not a drop of blood was lost, and the patient was scarcely conscious of pain from the two incisions. The catheter was retained in the bladder two days, and after this the water passed in a good stream. I now passed a catheter daily, gradually increasing the size to No. 9, when Mr. R. considered the cure complete. As a precautionary measure he occasionally introduces a catheter for himself.

CASE II.—Benjamin Brett, labourer at St. Katherine's Docks, æt. 47, applied to me in the beginning of May 1842, on account of difficulty in passing his urine. On examination, I found an obstruction three inches down the urethra, through which I could get no instrument. There were three openings in the perineum, through which the greater part of his urine came, and the whole perineum presented a hard cartilaginous mass. After trying the use of the armed bougie for five weeks, with no advance in the cure of the case, I determined on using Mr. Stafford's instrument. No. 6 lancetted stilette was introduced every other day until the urethra was rendered pervious to the extent of five inches. I then found it necessary to employ a small straight urethral perforator, as the calibre of the curved instrument was too large for the perforation which the stilette made. I succeeded in passing the straight perforator to the extent of seven inches, and then divided the stricture; after which I passed No. 4 wax bougie easily into the bladder. Since this time the urethra has been gradually dilated by means of the wax bougie, and No. 6 can be passed with ease.

This man had suffered from retention of urine on three occasions, on one of which the stricture had been divided by an opening made in the perineum. The opening in the perineum, however, never closed; the urethra had more the feel of cartilage than of the natural structure, and was contracted to the extent of several inches. Mr. Stafford has alluded to this state of the urethra at page 66 of the third edition of his work, where he says:—"In some cases the stricture has occupied so great a length of the canal, and has been so extremely indurated, resembling cartilage more than any other structure, that I have been obliged to employ the instrument at several different times. When such has been the case, I have found, after making an incision into the stricture, that by keeping it open by a bougie, the hardened structure has become absorbed as far as the puncture has gone; and then, as fast as the contraction has been opened, the surrounding diseased structure has disappeared, and a healthy membrane, analogous to that of the urethra, has formed. Hence, when the whole has been permeated, the stricture, whatever length it may have been, has been nearly cured; and it has only required two or three introductions of the steel dilator to restore the canal to its natural size and structure." Excepting on the last occasion of dividing the stricture, the patient felt little or no inconvenience after the operation; and during the whole of the time he followed his usual occupation. The operations in this case were witnessed by Mr. Hocking, surgeon, of Penzance, and my pupil, Mr. Markwick.

CASE III.—Mr. S., æt. 27, farmer, from Oxfordshire, consulted me June 17th, 1842, on account of stricture of the urethra, under which he had laboured upwards of seven years. On examining the canal, I found it in an extremely irritable state; and three inches and a half from the external opening a stricture which would not admit of the smallest sized bougie. The patient could only pass his water with much straining, and in drops. He laboured under great mental depression, and had lost his appetite and strength. On the evening of the same day I passed a lancetted stilette, and divided the stricture. The patient com-

plained of severe pain, and lost about two ounces of blood. On the following day I requested the assistance of Mr. Stafford. No. 4 bougie could be passed through the first stricture to the extent of five inches and a half. Beyond this it would not go. I then introduced a straight perforator, and divided the strictured part. A small elastic catheter was passed immediately afterwards with ease into the bladder, and retained for forty-eight hours. After this time the size of the instrument was gradually increased; and on the 29th of June he left town, being able to pass No. 6 silver catheter for himself.

In consequence of the great mental depression under which he laboured, I thought it advisable to keep him under the influence of morphia during the whole of the time he was under treatment. When he left London he had recovered his usual spirits, and his health was rapidly improving.

My object in publishing these cases is to assist in removing the feeling which too generally prevails against Mr. Stafford's treatment in cases of impermeable stricture; for nearly all who have written on the complaint more or less condemn the use of his instrument. In alluding to it, Sir Benjamin Brodie says:—"Mr. Stafford has invented an ingenious machine, which is intended to divide a stricture by means of a cutting instrument. If any cases occur in which this method may be useful, they are undoubtedly very few in number; and great caution must be required to avoid making false passages, which might be followed by effusion of urine and purulent deposits\*." These were the fears which unfortunately influenced me in rejecting for years this most valuable instrument. I say unfortunately, for I now recal to my recollection numerous cases in which I failed to afford relief for want of this or a similar instrument. I believe that there is much less danger of making a false passage with the lancetted stilette, carefully directed against an impermeable stricture, than in the use of the common catheter or sound. As to the effusion of urine and purulent deposits, how rarely do they

\* Lectures on the Diseases of the Urinary Organs, 3d edition, page 64.

occur, in cases where great violence has been used, and lesion of structure has taken place in the attempts to introduce instruments into the bladder. In the use of Mr. Stafford's instrument, admitting that the division is not made in the direction of the canal, it is certain to be made *anterior* to the obstruction, and consequently not likely to be attended with infiltration of urine. In lieu of Mr. Stafford's operation, Sir Benjamin Brodie proposes the following modification, which he adopted in a patient, viz.:—"I then make an incision in the perineum, dilating the fistulous sinus, and laying open the membranous part of the urethra as far forward as the stricture, the exact situation of which was marked by the bougie. The bougie was then withdrawn; an instrument was then introduced in its place, consisting of a straight silver tube, closed at its extremity, except a narrow slit, through which a small lancet could be made to project, by pressing on a stilt which projected on the handle of the instrument; the round extremity of the tube being pressed against the anterior part of the left hand, introduced through the wound in the perineum and urethra to its posterior surface. The pressure of the instrument being distinctly communicated to the finger through the substance of the stricture, the lancet was protruded, and the stricture was divided. A silver catheter was then easily introduced through the urethra and divided stricture into the bladder, and allowed to remain there. The urine, of course, flowed through the catheter. At the end of two days the silver catheter was removed, and replaced by one of elastic gum. The wound in the perineum gradually healed, and the patient ultimately recovered, making water in a full stream, and being able to introduce a sound of a full size into the bladder, so as to prevent a recurrence of the contraction."

Now the following is Mr. Stafford's plan\*. The single lancetted stilette, or urethral perforator, is passed down to the stricture, the exact distance of which from the extremity of the urethra is first ascertained. When the point of the instrument is arrived at, and

rests upon the contraction (which is known by means of its graduation,) and is in an exact line with the natural course of the canal, the instrument is held and maintained in that position by the left hand, the fore-finger of which being passed through the ring on the under part of its handle, the thumb of the right hand is passed through the ring on the handle of the stilette. The stilette is then pressed gently and gradually forward, when the lancet is protruded out at its point, and is thus made to incise the stricture. The lancet must be immediately drawn back, or allowed to retire into the sheath, by the action of the spring.

In the operation which is proposed by Sir Benjamin Brodie, as a modification of Mr. Stafford's, and as a substitute for it, an external wound is made in the perineum for the purpose of preventing infiltration of urine, and next for the purpose of guiding the lancet.

I have already alluded to the little chance of infiltration of urine, and I know of no case in which it has occurred. As to guiding the lancet, I really think the instrument may be as safely guided when passed down the urethra, and held properly against the stricture, as by the finger introduced through the wound in the perineum. The principle of the operation is Mr. Stafford's; the modification is the opening in the perineum, which complicates the operation, inflicts additional pain, and prevents the patient, for a time at least, from following his usual avocations.

Mr. Liston, while speaking of Mr. Stafford's instrument, observes, "Here, again, is another contrivance of the kind, which is called a *lancetted stilette*. It is a catheter with a lancet, which can be made to protrude at its point. It is a very dangerous tool. Indeed, I do not know who would choose to have this introduced into his urethra. It must be a highly dangerous proceeding in the hands of any one, however dexterous he may be.\*" I hope, however, that Mr. Liston's opinion has undergone a change; for I have been informed by a gentleman who witnessed the operation last year in the North London Hospital, that Mr. L. employed Mr. Stafford's instrument; and the same gentleman in-

\* Stafford on the Treatment of Stricture, 3d edit. p. 63.

\* Lancet, vol. i. Session 1835-36, p. 770



forms me that the patient is now quite well.

I will not, however, quote additional authorities to shew the feeling which exists, or has existed, against this plan of treatment: I only beg my professional brethren to put Mr. Stafford's instrument to the test of experience. I have this week operated on a man whose urethra was quite as much contracted as in the second case which I have related, and who assured me that it always took him five minutes to void his urine, and that the straining was so great as frequently to cause bleeding at the nose. By means of the straight urethral perforator, used three times, I was enabled to get an instrument into the bladder, and the patient to void his urine with comparative ease.

I am not wishing to urge this plan of treatment in cases where there is any passage, however small, through the stricture; but in every case where the contraction is so great as not to admit of the introduction of an instrument, Mr. Stafford's plan, in my opinion, offers a safe, speedy, and effectual mode of cure.

### ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.

(For the Medical Gazette.)

[Continued from p. 530.]

TIC DOULOUREUX has been minutely described by various authors, amongst the oldest of whom is Aretæus the Capadocian. It has been a disputed point, however, with some, whether his description were intended to apply to neuralgia, inflammation, or acute rheumatism; but I think there can be little doubt that he is depicting, graphically, and faithfully too, the progress of neuralgic affections, when he says, "*Formæ cephalæ infinitæ sunt. Quibusdam enim perpetuus dolor; nonnullis per circuitus revertitur, ut iis qui quotidiana intermittente febricitant, dolor modo est in toto capite, modo in dextra magis, modo in sinistra, modo circa frontem, aut sinciput: hæcque eodem die incerte et erraticæ fieri solent. Quidam dextra tantum parte dolent, quidam læva: qua tempus, vel auris, vel supercilium unum, vel oculus ad medium usque*

*terminatur, vel qua nasus in æquas partes dividit, ultra quem terminum dolor non progreditur, dimidiam tantum capitis occupans. Haud leve malum quamvis intermittit quamvis exiguum esse prima specie videtur; nam si acute interdum impetum faciat, fæda atque atrocia detrimenta adfert: nervi distenduntur, facies obtorquetur; oculi vel contenti instar cornu rigidi sunt: vel huc, atque illuc, interius convelluntur, ac vertiginose agitantur: in ipsisque dolor profundus usque ad intimas tunicas descendit. Neque ulla causa præcepit, perinde ac si quis ligno plagam inflixerit\*."*

Celsus contents himself by dismissing the subject in a very cursory and unsatisfactory manner. He merely states the bare proposition, that pain is wont to occur in the nerves. "*Interdum verò etiam nervorum dolor oriri solet;*" and after recommending the "hydropathic system" to some extent, he says, that mutton suet, hyoscyamus, and stinging nettles, applied topically, will complete the cure. "*Utile est etiam sebum miscere cum hyoscyami et urticæ contritis seminibus sic ut omnium par modus sit, idque imponere†,*" &c.

Wepfer, at a comparatively late period, gives the case of a female whose disorder he designates "*hemicrania læva;*" and as it contains an early and a faithful description of the progress of facial neuralgia, I will transcribe the paragraph in which it occurs, entire. He says, "*dolor subito illam invadit: occupat partem genæ sub palpebra inferiori, ubi os maximum maxillæ superioris situm est in dextro latere, inde vergit versus tempus, simulque affligit frontem supra oculum et nasi partem dextram, et portionem labii dextri infra pinnam narium, ut attractum plane non ferat; graviter quoque circa radicem oculi dextri excruciat, ac oculum quasi retrahit, lacrymasque profuse exprimit—dolor est lancinans, urens, pungens, tendens, prope intolerabilis, sed brevis et momentaneus: sæpe per duas aut tres septimanas afflixi, aliquando in una die, in una hora sæpius illam adoritur. Dum me hodie convenit intra horam plusquam sexies eam invasit, qualibet vice lacrymas ex solo dextro oculo expressit oculis rubint, inde labium tremebat in dextro latere."*†

\* De Caus. et Sign. diuturn. Morborum, lib. i. cap. 2.

† De re Medica, lib. iii. cap. xxvii. sect. 2.

‡ Observatio 50.



It would be inexpedient to weary your readers by entering into a minute description of the peculiar nature of the pain which characterizes tic douloureux. It is too well known, and has been too elaborately described by every writer on neuralgia, to need recapitulation. It will be sufficient to state in broad outline, that it essentially affects the nervous system, is of paroxysmal character, and attacks persons of all ages, and of every temperament and idiosyncrasy.

It has been presumed that if the affection, in some of its severer forms, were persistent, tic douloureux, owing to the intensity of the suffering it produces, would be more fatal than it is in its effects, by indirectly undermining the constitution, and sapping the foundations of health. As it is, however, the pains may "quite subdue a powerful frame\*," and may "wear out the patient at last†."

Mr. Swan has endeavoured to explain the cause of the intermittent action of tic douloureux, which explanation, however, will apply with equal fidelity to any other disorder which is paroxysmal. He says, "it may be that a nerve cannot at first bear a diseased action without rest, any more than it can a healthy one, and therefore, after a certain period, it ceases to make any impression; but after this rest the nerve acquires new powers, and is again fitted for action." This is the mere technical narration of an obvious effect, and leaves the cause for the examination of succeeding inquirers.

The nomenclature of fatal neuralgia is abundantly profuse; thus we have synonymes of various writers, some of which are intended to be scientifically explanatory of its character. André denominated it tic douloureux; Sauvages, trismus dolorificus and trismus maxillaris; Fothergill, faciei morbus nervorum crucians; Young, autalgia dolorosa; Heberden, dolor capitis intermittens; Chaussier, neuralgia facialis; Good, neuralgia faciei; Darwin, hemi-crania idiopathica; Kerrison, neuralgia spasmodica, &c. &c. Some of these scientific soubriquets are evidently objectionable, Darwin's appellation especially so, as in the first place the cranial integument is frequently untouched during the persistence of the disorder in its most aggravated form;

and in the next, as I before observed, it probably never occurs as an idiopathic affection.

The term *tic* is of French origin, the derivation of which is unknown, and it is somewhat amusing to find how widely the curious etymologist has overshot the mark in the endeavour to elucidate the important mystery. Some imagine it to be a synonym of the Greek *τρίση*, "which," says Mason Good, "like the French synonym, is supposed by the lexicographers to be an *onomatopy*, or a word formed from the sound that takes place in the act of gnashing." Other learned men, with Sauvages and Soleysel at their head, gravely assert that the technical monosyllable was suggested by the sound caused by crib-biting horses!

The trismus of the Greeks, with which this word has been sometimes confounded, appears to have been another and a very different affection, not the locked-jaw of the moderns, but consisting in a convulsive or agitative spasm of the inferior maxilla; and "the use of trismus or tic, to import," says Mason Good, "a state of muscle directly opposed to that which it first indicated, is another proof of the incongruous change which is perpetually occurring in the nomenclature of medicine, for the want of established rules and principles to give fixation and a definite sense to its respective terms."

When tic douloureux is confined to the face, the slightest external cause is sometimes sufficient to produce a paroxysm: a touch, the rush of cold air, and the action of the jaws in mastication, frequently excite insupportable agony. Hard knots are formed along the course of the nerve, which have erroneously been supposed to arise from an action in the nerve itself. They are produced by contraction of the muscles in the immediate vicinity, which contraction has arisen from communicated irritation. Some idea may be formed of the intensity of the pain arising from neuralgia by the following extract, taken from Mr. Hutchinson's pamphlet on Tic Douloureux:—"On rising one morning from my bed, I suddenly felt a sharp pain. My first impression was, that a wasp had stung me; but before I could examine the part whence the pain proceeded, I received a second and more severe shock, repetitions of which occurred in the most rapid succession

\* Swan on the Nerves.

† Bell's Operative Surgery.

for about five minutes: it then ceased as suddenly as it began. Though I cannot compare the pains to anything I ever felt (nor do I think the imagination can easily conceive, much less words describe, the exquisite acuteness of the paroxysm), yet I remember, with the most vivid recollection, the intensity of these first sufferings. On receiving the second shock, I was instantly thrown into a state little short of phrenzy. I grasped the affected part with violence, rolled on the floor; then suddenly starting up, ran round the room, till at length being worn out with the agony of the torture, I sunk on the bed in a state of almost senseless exhaustion. On recovering from the stupor, I found my face covered with a cold perspiration, and my whole body in a state of nervous excitement." I shall have occasion hereafter to recur to this work, when speaking of the cause of *tic douloureux*.

When the affection is unusually severe and of long continuance, local determinations frequently take place, and consequent increase of temperature. These circumstances have misled the practitioner into the belief of its inflammatory origin. In a case which presented itself to my notice, effusion had taken place in the cellular membrane of the upper eyelid, causing a persistent cedematous puffiness. It yielded rapidly, without topical applications, upon the subsidence of the irritation which produced it.

When the pain occurs in the cheek, fauces, or tongue, a copious flow of saliva is produced; and tears flow abundantly when the ophthalmic branch of the nerve is affected, that being the source from which the lachrymal gland derives its principal supply of nervous energy.

[To be continued.]

## DEATH FROM PEAS.

*To the Editor of the Medical Gazette.*

SIR,

SHOULD the following case appear to you worthy of a place in the pages of your journal, you will perhaps give it insertion. It is in some degree interesting, as affording a curious example of a mechanical cause giving rise at the

same time to obstruction of the bowels and retention of urine.—I am, sir,

Your obedient servant,

GEORGE JOHNSON,  
Physician's Assistant, King's College  
Hospital.

June 30, 1842.

John Lydbury, æt. 60, labourer, was brought to the hospital on Monday, June 27th, when it was stated that, since Wednesday the 22d, he had been labouring under obstruction of the bowels, which he attributed to his having eaten a large quantity of peas on the 21st; and that since Friday the 24th there had been retention of urine. During the interval between the 22d and the 27th, when he came to the hospital, he had severe pain in the abdomen, bilious vomiting, and constipation, for which he took purgative medicines, but without effect. At the time of his admission he was very much debilitated, the features pale and shrunken, the skin cold, the pulse feeble. As he was being carried in a chair up to the ward, he suddenly fell, and expired almost immediately.

On examining the body 26 hours after death the bladder was found excessively distended, its apex reaching the umbilicus, while its base nearly filled up the brim of the pelvis, and compressed the large intestine, as it passed over the brim into the cavity of the pelvis. The stomach was healthy, and contained about an ounce of liquid. The small intestines were distended with gas; the colon contained a considerable quantity of soft *fæculent* matter, and was, besides, much distended with gas. The cause of the obstruction was found to exist in the rectum, which contained upwards of a pint of common grey peas: these had been swallowed in a dry state and almost without mastication: they had undergone no other change in their passage through the intestine than that of becoming swollen by the absorption of moisture; some of them were mixed with the *fæcal* matter in the colon, but the greater number had accumulated in the rectum, where they formed a solid mass which occupied almost the entire pelvic cavity: this mass had pushed upwards the bladder and prostate, and compressed the urethra, so as to render impossible the evacuation of the bladder by any effort on the part of the patient. It was with considerable difficulty that a

catheter was introduced into the bladder after death; the sensation communicated by the passage of the instrument over the uneven mass, which was pressing upon the urethra, gave rise to the idea that there was stricture, but the canal was found to be quite free from disease. No appearance of disease in any other part of the body.

### CASE OF HERNIA.

*To the Editor of the Medical Gazette.*

SIR,

THE following case of hernia occurred in my practice a few years ago, and should it be found to present some points of practical interest and utility to your numerous readers, I shall be amply repaid for transferring it from my case-book to the pages of your valuable journal.—I am, sir,

Your obedient servant,  
T. HERBERT BARKER.

Bedford, July 1, 1842.

In the evening of Nov. 6th, 1837, I was called to visit Mrs. W., aged 68, of lax fibre, who was then labouring under an attack of the prevailing epidemic influenza. The countenance was somewhat tumefied and anxious, and the eyes considerably injected. She was troubled with an incessant cough, in consequence of which she had not slept for the two previous nights. The expectoration was colourless, very tenacious, frothy, and raised with great difficulty. She did not complain of soreness or pain in the chest; the action of the heart was somewhat excited, but regular; the tongue much furred; appetite diminished, and thirst considerable; the bowels constipated, and the skin slightly moist. On applying the stethoscope, mucous r  le was very perceptible over the whole of the chest.

Saline aperients and expectorants were prescribed.

Nov. 7th.—The bowels have been operated upon once; she has a constant nausea; the cough is distressing; expectoration copious, but attended with difficulty; the skin moist; tongue somewhat improved in appearance; the countenance less anxious, and the conjunctiv   not so injected.

The medicines to be continued.

8th.—I was called to her during the

night in consequence of a tumor having made its appearance in the right groin during a violent fit of coughing. She states that she has had a small tumor in that region for the last five or six years, but that it had not before produced any inconvenience. She has vomited after every thing taken into the stomach, whether medicine or food, and at other times of a dark bilious fluid. She complains of dragging pain in the region of the diaphragm, and of acute pain in the upper part of the swelling whilst coughing. The countenance is anxious, and the bowels have been operated upon but once since I was first called to her. On examining the tumor, I found it to be an internal inguinal hernia, of about the size of two fists, very tense, and somewhat painful on pressure. The taxis was resorted to for about ten minutes, but without success, and being attended with considerable pain, I desisted therefrom, and ordered warm fomentations.

In the forenoon I again visited my patient, and found that the warm applications had been perseveringly employed; the vomiting continues; and the dragging pain around the upper part of the abdomen is increased. The swelling as tense as before, and at this time also resisting every attempt at reduction. Prescribed pills of calomel and the extract of colocynth, and ordered a strong terebinthinate enema. Employed cold applications to the tumor in the place of the warm fomentations.

At 3 P.M. I found that the pills had been rejected by the stomach, and that the vomiting had become more frequent since my last visit. The attempt to reduce the hernia was as unsuccessful under the use of the cold, as it had been with the warm applications; and I prepared the mind of my patient for an operation, should those attempts prove unsuccessful for a short time longer. At her request, I called upon Dr. Witt, who saw her at 8 P.M., when we procured some ice, which was pounded, included between two layers of a hand-towel, and applied for some time to the hernial tumor. The taxis was then successively repeated by each of us, but still without success. The pain continuing severe, the vomiting distressing, having administered three doses of aperient medicines, and an

enema, and the taxis having been repeatedly resorted to, without producing the slightest impression upon the swelling, the operation was determined upon, which, with the valuable assistance of Dr. Witt, I proceeded to perform in the following manner.

*Operation.* — Having brought the patient to the edge of the bed, with a rather convex-edged scalpel I made an incision from the upper to the lower part of the tumor along its greatest convexity, and by that incision divided the common integuments and superficial fascia, which were found to be of considerable thickness; by another gentle incision the hernial sac was reached, which I pinched up at the lower part of the tumor, and opened with the point of the scalpel held horizontally, when a small quantity of fluid escaped, and a portion of omentum presented itself. The peritoneal covering was divided for a short distance on a director, when I introduced the forefinger of my left hand, and divided the sac upon it along the whole length of the first incisions, thus bringing to view a large quantity of the omentum; on unravelling which, we found a loop of intestine, about three inches in length, of a chocolate colour. The end of a director was introduced between the stricture and intestine, and the curved blunt-pointed bistoury conveyed along it, with the extremity of which I divided the stricture in a direction upwards and slightly inwards. On applying very gentle pressure between the thumb and fingers in returning the loop of intestine, it was deprived of its peritoneal coat for the extent of about an inch and a half, and, stripped of that portion of the investing peritoneum, and being perfectly freed from the stricture, it was returned into the abdomen. The omentum was then attempted to be thrust into the abdomen after dividing some adhesions between it and the hernial sac, but in vain, from the quantity which had been protruded from the abdomen. It was then judged necessary, both by Dr. Witt and myself, to pass a strong ligature tightly around the narrow neck of the omentum, and to remove the great bulk of it, which was accordingly done. It was found necessary to secure a small artery which had been divided in removing it, when the hæmorrhage ceased. The wound having been sponged, the edges

were brought together and secured by two points of interrupted suture; the part was covered by a compress of lint, which was confined by a bandage passed with moderate tightness around the body, and carried across the perineum and thigh on that side. Our patient was placed comfortably in bed, somewhat fatigued, and a copious enema was immediately administered, which came away tinged with very dark-coloured and offensive fæces. From this period the old lady gradually recovered, and the wound healed most favourably. She is now enjoying a good state of health, and has, for some time, worn a truss opposite to the internal inguinal ring of that side.

The mass of omentum cut away in this case weighed three ounces and six drachms.

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DESCRIPTION OF A PREPARATION  
OF A REMARKABLE  
MALPOSITION OF THE STOMACH  
AND TRANSVERSE ARCH OF  
THE COLON,  
CONTAINED IN THE MUSEUM OF THE ARMY  
MEDICAL DEPARTMENT, FORT  
PITT, CHATHAM.  
BY GEORGE WILLIAMSON, M.D.  
Staff Assistant-Surgeon.  
(*For the Medical Gazette.*)

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THE preparation displays the whole of the stomach, and greater part of the transverse arch of the colon (both rather small), with the omentum situated in the lower and anterior part of the left cavity of the thorax. The anterior surface of the stomach is firmly attached to the lower lobe of the lung; the lung of this side, as might be expected, has become much reduced in size, and occupies the superior and posterior parts of its proper cavity. The right lung is smaller than the left, from the circumstance of the heart being much displaced by the stomach and colon, and instead of extending across, from the 2d rib of the right side to the 6th of the left, as this viscus naturally does, it now lies nearly parallel to the spine, having the apex almost on a line with the coronary ligament of the liver, and being of the natural size, must have proved much less yielding during inspiration than the stomach and colon on the other



side of the chest. It is probable, from appearance, that the wound of the diaphragm extended about three inches in a transverse direction, near to the centre of the dorsal attachments of the left side of that muscle; but as the objects forming the hernia have contracted adhesions to the parts formerly injured, and as the peritoneum lining the diaphragm is in many places continuous with that covering the colon, there is therefore considerable difficulty in ascertaining that point with precision.

*History of Case.* — Serjeant D. B., 88th Regiment and Company, when out skirmishing on the day preceding the battle of Fuentes d'Onor (which occurred in 1811), one of the enemy, posted on the left of a steep hill, fired as he (the serjeant) was in the act of ascending, and wounded him in the chest. The ball entered close to the nipple of the left breast, and passed out at the back, between the 8th. and 9th ribs, as was evident from the scars seen at the post-mortem examination. The anterior wound soon healed, but the posterior one did not do so for a considerable period; but when it did close, he became affected with such severe cough and expectoration, that his medical attendant deemed it proper to lay the posterior wound open again, which relieved his symptoms very much, and portions of his shirt and jacket were discharged. After this his health improved so rapidly, that he was soon enabled to rejoin his corps. It appears, however, that the wound of the back repeatedly opened and healed afterwards, generally at intervals of twelve or fourteen months; but for the last six years of his life it continued closed. His appetite was bad, and he was often troubled with flatulence and dyspeptic symptoms; and if at any time the stomach happened to be overloaded, vomiting occurred, and he was therefore obliged to eat small quantities of food at a time. Bowels generally regular. The chief bad effects which this person himself attributed to his wound were, that since receiving it he never had been able to wear his knapsack with ease, and his breathing became much affected whenever he walked at a quick pace, or ascended a hill. He died in 1833, in consequence of gangrene of the left lower extremity.

An attentive consideration of the parts will easily account for all the symptoms which this person complained of since receiving the wound in the manner above described; he also enjoyed good health before that period, and was even remarked by his officers to be an active soldier. From these circumstances it seems probable that this singular malposition of parts was the result of a wound of the diaphragm, and not a congenital malformation. The difficulty of breathing, when he walked fast or ascended a hill, may be accounted for by the capacity of the chest being diminished by the presence of the stomach and transverse arch of the colon; and the vomiting whenever he ate more than a small quantity of food, is in like manner explained by the latter function influencing that of digestion to such a degree, that the pneumogastric nerves supplying both became affected, and so vomiting was the result.

This case, in whatever light it is viewed, whether as a congenital malformation, or the result of a wound of the diaphragm, is singular; inasmuch as he enjoyed good health previous to the accident, and even after it, to such an extent as to enable him to do his duty for nearly twenty-two years.

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## USE OF MOXA IN RHEUMATISM.

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*To the Editor of the Medical Gazette.*

SIR,

I SEND you some cases treated by moxa, hoping it will induce others to insert their experience of moxa in similar cases.—I am, sir,

Your obedient servant,

JOHN LENRY.

Bray, June 30th, 1842.

The labouring classes in Ireland, from exposure and insufficient clothing, are very subject to local rheumatism. Rheumatic fever is a disease comparatively rare amongst them. Those forms of most frequent and distressing occurrence are lumbago, rheumatism of the deltoid muscles, and sciatica. In obstinate cases of local rheumatism I invariably apply moxa; there is no application so immediately successful, or which creates less inconvenience to the patient, especially if he be a labourer.



At dispensary my ordinary treatment for lumbago is castor oil and turpentine draught, as follows.

*R. Olei Ricini, ℥j.; Terebinth. Syrupi, aa ʒiij.; Aq. Menth. Piperit. ʒj.. M. ft. haustus.*

The turpentine epithem on flannel to the loins, kept on from twenty minutes to one hour, or until, in fact, the patient exclaims loudly for its removal: it often brings out very minute vesicles, and the cuticle desquamates. Also ten or fifteen grains of Dover's powder at bed-time, the feet and legs being bathed in warm water.

In rheumatism of the deltoid muscles, and sciatica, apply moxa by all means, as blisters and tartar emetic ointment disable the patient, and render him incapable of working. The labouring classes cannot afford to be confined to the house, whereas after the application of moxa the patient may return to his work at once. I shall instance a few aggravated cases in which it proved successful.

James Pender, *ætat.* 56 years, got sciatica from standing in water, the principal part of a day, washing sheep. He had been confined to the house, nay, to the bed, for six weeks, and had used a variety of means—stupes, blisters, warm plasters, &c. without deriving the smallest benefit. I applied moxa in three places; first, at the origin of the nerve, each application three inches distant, and following the course of the nerve down the limb. This man had eighteen applications. From the first burning the disease descended, so that I had to continue it down the limb to the ankle. Several of the burns continued open for some time. One particularly down the calf of the leg discharged pus for three weeks. This man has been ever since (now five years) at labour without having had any return of the disease.

Judy Cavanagh, *æst.* 57 years, confined to bed six weeks from sciatica of right limb: was burned in four places, on those parts in the course of the nerve which she indicated as most painful. She was immediately cured. That was three years ago. Last winter she had the disease in the left limb, was confined to bed, and suffered excruciating pain. The moxa again relieved her, being applied in seven places. She had not any internal medicine during either attack.

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Bridget Doyle, *æst.* 48 years, living at a distance of three miles, being informed of her sister's recovery, was brought to the dispensary on a car, and carried in, being unable to put the limb under her; had been confined to bed for fifteen weeks. This woman was burned in three places; and so immediate was her recovery, that she walked home with her husband in two days after. He, labouring under rheumatism of the deltoid muscle of the right arm, which rendered him incapable of working (having been employed in thrashing corn), was burned in two or three places, which enabled him to return to his work the following day.

A stout able-bodied young man, who had undergone a variety of treatment, was blooded, blistered, purged, used sudorifics, and finally had tartar emetic ointment rubbed in throughout the whole extent of the limb, from which he had no relief; from this unlimited application of tartar emetic ointment, a mass of tubercular swellings remained in the skin, so thick that it was difficult to procure places for the application of moxa; he was burned in three places, and became immediately well, now two years since. He has had no return. I selected the foregoing cases to shew its permanent benefit.

June 15th, 1842.—Jane Gaskin, *æst.* 14 years, has had sciatica of the left limb for five weeks, and been confined to the house from pain and inability to move the limb (the limb is smaller than the opposite). Moxa applied in three places, from the ischium to popliteal space; lost all pain immediately, and was able to return at once to her ordinary avocations. This girl had been blistered, used tartar emetic ointment, aperients, &c. without any benefit: has had no return of pain up to this day (June 30th).

My experience would lead me to say that if there be not an immediate relief obtained on the first or second application, the case will be tedious, or pass down the limb, as in Pender's case. I am at present treating a case exactly like Pender's, in which the pain has left the parts first burned, and is now taking the course of the posterior tibial nerve.

The way in which I make moxa, and apply it, is the following:—In a strong solution of nitrate of potass, soak

a piece of lint, then dry it, cut off pieces the size of the thumb nail, fasten them at one extremity over the seat of pain by a thin adhesive plaster, set fire to the opposite extremity, then blow on it strongly with a blow-pipe. The pain during the operation is very severe, causing an immediate puckering of the cuticle. Those cases did best, in which, under its influence, a general perspiration broke out.

Had I not mislaid my note-book, I should have been able to have detailed these cases more accurately, and given some cases of affections of the knee and spine in which it proved successful. For the last six years I have been using moxa with undeviating success, and cannot instance a case in which it failed. When first proposed, the idea of being burned was such that it prevented many submitting to it; but now that they have had demonstrative proof of its efficacy, they gladly submit, preferring it much to the application of blisters.

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## MEDICAL GAZETTE.

Friday, July 15, 1842.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medice* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

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## HEALTH IN LONDON.

IN a recent number of Hufeland's "Journal der practischen Heilkunde" is a paper by Dr. Link, of Berlin, in which a comparison is drawn between the salubrity of this metropolis, and some other large towns in England, and that of the continental cities. The opinions contained in it are founded chiefly upon observations made by the author during repeated visits to this country; and we think a short account of them may not be uninteresting to our readers.

Dr. Link commences by giving a description of the position of London, and the manner in which it is built, observing that, from its appearance,

we should be led to form a most unfavourable opinion of its healthiness. It is scarcely at all elevated above the level of the sea, and is at a considerable distance from it. Its streets are narrow, and irregularly built; and the houses closely arranged. The climate is rainy and cloudy, so that the sun is sometimes not seen for weeks together, and lights are occasionally required in the houses at mid-day. In addition to this, the fumes from the quantity of coal burnt, not only in the private houses, but also in the manufactories for the supply of steam-engines, maintain a constant thickness and heaviness in the atmosphere, and combine with many other circumstances to render it apparently the most unhealthy of cities.

But, notwithstanding all these disadvantages, notwithstanding its immense and crowded population, and other things which lead us to form so unfavourable an opinion of it, Dr. Link goes on to say that this idea is by no means corroborated by the statistical accounts.

In fact, it is shewn to be one of the most healthy cities in the world, in proportion to its population. The following tables of comparison between the relative mortality in London and Berlin are adduced in proof of this assertion:—By the census taken in 1831, the population of London is stated to have been 1,474,069. The number of deaths in the same year were 28,363, or 1·9 in 100. In 1832, the number of deaths amounted to 26,974; in 1833, to 27,090, which is equivalent to about 1·8 in every 100. In the city of Berlin, in the years 1820, 1821, and 1822, the number of deaths, in proportion to the population, was 2·64 per cent. In the years 1823, 1824, and 1825, the number of deaths averaged 2·96 per cent. In 1826, 1827, and 1828, 2·83. In 1829, 1830, and 1831, 3·24. In 1832, 1833, and 1834, 3·15. In 1835, 1836, and

1837, 3·04. In the year 1837, the cholera being prevalent, the proportional number of deaths amounted to 3·89 per cent. By the last enumeration, made in 1837, the population was stated to be 283,722. In 1838, the number of deaths were 8554, being, in proportion to the living, as 3·01 to 100; and in 1839, the deaths amounted to 8344, or 2·8 in 100.

The averages taken from the reports of other large towns in England, as Liverpool and Manchester, are equally favourable to them. In the former, the population in the year 1837 was 293,327, the number of deaths were 3996, making about 1·96 in 100. In Manchester, in the same year, the population was 168,911, the number of deaths were 2718, or 1·61 in every 100.

The author of the paper then enters into a long dissertation on the cause of this preponderance in favour of the English towns, discrediting the opinion which is sometimes maintained, that the fumes from the coal fires impregnating the air destroy the matter of contagion, and prevent the spreading of epidemics, on the ground that epidemics have scarcely any influence in raising the average standard of mortality in a given number of years, and that we have no evidence that the gases arising from the combustion of coal possess the purifying properties by some ascribed to them.

One of the reasons which Dr. Link assigns for the healthiness of our metropolis and other large towns, is the nature of the climate, which, in this country, is not the subject of extremes, though very liable to vicissitudes; it is neither too warm in summer, nor too severely cold in winter; whereas, in many continental towns, it is during the extremes of temperature that the greatest mortality takes place. Nevertheless, in Amsterdam, the climate of which is not very different from our

own, the number of deaths, in the year 1837, was, to the population, 4·03 per cent.; there not being at that time any epidemic to account for this high rate of mortality. It is, however, sufficiently explained by the state of cultivation, and the extent of swampy ground in the vicinity of the Dutch capital, which, occasionally drying in part, forms a fertile source of malaria and disease.

The mode of living in English towns is referred to as a cause of the comparative good health of their inhabitants. And though from the description given of the comfort, convenience, and airiness of the dwellings of the poor, we may infer that Dr. Link possesses no very accurate acquaintance with the hovels of our cities (where occasionally two or three families are crowded into one room, where the houses are situated in narrow courts and ill-ventilated streets, and the inhabitants, confined within them all day long, can scarcely ever realize the luxury of pure air and an open space), it is, no doubt, true, upon the whole, that the houses are less thickly clustered together, and less densely populated, than in many continental towns. They are generally cleaner. The English, too, (contrary to the notion of our continental neighbours), drink less of ardent spirits than is the custom, especially in the northern towns of Europe, and their diet is generally of a better and more wholesome nature. It is well known that the poor in this country shew an almost epicurean particularity as to the quality of their food: so long as it is in their power to avoid it, they are wise enough not to tolerate such inferiority in the essential articles of their diet, as to render them unwholesome.

In the paper before us, however, several of the most obvious and important causes which contribute to the

salubrity of London, and the generality of our large provincial towns, are omitted. Foremost among these may be mentioned an excellent drainage, and a good supply of fresh water. The underground circulation of London, if we may so call it, is really admirable. The vast sewers and various pipes, running in every direction many feet below the surface of its streets, form a remarkable system, the extent and good management of which is but little known to the numbers who are reaping the advantage of it. When we remember that the difficulties of carrying off the impurities of a city increase in proportion to its size, it is marvellous that they should have been so well overcome in London. For, notwithstanding the innumerable sources of filth in this metropolis, how rarely are we offended by any cognizance of it. The defects in the drainage are only local ones; and, in many instances, depending as much on the neglect of the inhabitants as on any other cause. The good supply of fresh water, too, from various sources, is most conducive to the purity of the city and the health of its inmates. In these respects our metropolis forms a striking contrast with many of the continental cities, in which the centres of the streets are often allowed to be loaded with filth from the neighbouring houses, which contaminates the air, and contributes to the origin of fevers and many other diseases.

The parks and squares, which have been well called the *lungs* of the metropolis, play no mean part in contributing to the health of the citizens. In addition to the important use of affording a space for relaxation and amusement, they serve as reservoirs of pure and fresh air. This is the especial advantage of squares situated in the middle of the city, which, forming as it were centres from which pure air may

radiate into the surrounding districts, purify the neighbourhood in a more effectual manner by their number, than the larger parks situate in the vicinity can do. Many of the most thickly inhabited districts in London enclose open spaces of this sort, and are in no small degree indebted to them for their immunity from fevers and other diseases generated by close dwellings and impure air, which, in so large and populous a city, would almost constantly rage but for these causes. The noxious gases generated by the processes of life, combustion, &c. are of course in some measure carried off by their tendency to intermix with the air around; but this would be a slow process, and insufficient for the proper renovation of the atmosphere, which is in great measure effected by the currents from the open spaces within and without the city.

But all parts of London are not equally healthy, even independently of the number of squares contained in them: for the cause of this difference we may look to the dry or damp nature of the soil, and the high or low ground on which the houses are built. For instance, low fevers are very prevalent in the districts situated between Hyde Park and the River, including Belgrave and Eaton Squares, and the surrounding neighbourhood, perhaps as much or more so than in any other part of London. And the physician well knows how much the convalescence of his patients is frequently retarded by the nature of the atmosphere, or some other cause operating unfavourably on those who reside in this situation: they will sometimes remain on the sick list without improvement for weeks together, when the simple removal to higher and more dry situations acts almost as a charm, and produces speedy recovery.

We must not uphold our metropolis as a model of purity and hygienic perfection, till many circumstances are re-

moved which at present detract from its claims thereto, and we need at this time only refer to the custom of burying within the city. So numerous and so near the surface are the corpses interred in many of the church-yards, that,—especially during the warm weather,—a constant and perceptible halitus is emitted from them, which must be highly injurious to the inhabitants of the adjoining districts. With the immense population of London this has become a serious subject, and one demanding the attentive consideration of Government. Not long ago a petition was presented in the House of Commons from a portion of the city of London, comprising Old Street, Goswell Street, &c. in which there are 18,000 inhabitants, who complained that there were but four places of interment in that densely populated neighbourhood, and who prayed that burying-ground should be provided at a convenient distance from the metropolis.

These subjects, though less involving party contests and political principles than many others, and therefore less frequently made the subject of investigation in Parliament, are highly important, and equally concern the best interests of our citizens. The institution of a few cemeteries in the vicinity, by private companies, can produce but little benefit, and no decided good will be effected till some general system is adopted, and the matter brought under the more immediate superintendence of Government.

#### EXPENSE OF INSPECTING LUNATIC ASYLUMS.

A PARAGRAPH headed "Metropolitan Commissioners of Lunacy" appeared some time since in the Times, and afterwards in one of our medical cotemporaries. After stating that thirty-six asylums are under the direct inspection of the Commissioners, and entering into some details respecting them, the paragraph concludes as

follows:—"In the last five years the expenses of the Commissioners have been no less than £13,583. 17s. 6d., of which there was paid, as fees to two barristers, £2920; to five physicians, £6498; the salary of the secretary, £2000; and chaise hire and other incidental expenses, £2165. 17s. 10d. *The average annual charge of inspecting each house was £388!*"

The sentence which we have put in italics is totally erroneous. The inspection of the thirty-six houses cost £13,583. 17s. 6d., during five years, *not annually*; and therefore the annual charge for inspecting each was but £75. 9s. 3½d.

#### CASES ILLUSTRATIVE OF THE USE OF THE FORCEPS.

BY THOMAS EDWARD BEATTY, M.D.

Professor of Midwifery to the Royal College of Surgeons in Ireland; &c.

IN the observations that follow I wish it to be understood, that I omit the consideration of those cases in which the capacity of the pelvis is so much diminished by malformation, tumors, &c., as to render the passage of an entire child impossible; and that I will allude only to the more common cases of difficult labour, in which, after several hours of severe pain, the head has been forced to a greater or less extent into the cavity of the pelvis, and is then arrested. When matters have arrived at that state, the practitioner's mind becomes alive to the dangers that may ensue. If some favourable change does not take place, the signals of distress will soon be exhibited, but with a rapidity, varying in different cases, from diversity of temperament. The pulse will become fast, the skin hot, the belly tender, the vagina hot, and the stomach irritable. These are signs which we know indicate impending or present danger: danger to the mother, and danger to the child. Knowing this, is it not our duty to avert them? Who, if he could, would not with a word terminate such a labour at such a time? Who would not wish to possess the means of shortening the agony and danger of his patient and her offspring? Leave her unassisted, and what have we to expect? a protraction of suffering, an aggravation of danger to the mother, and death to the child. That we have a safe and efficient means of averting these, by the careful use of well-constructed forceps, will appear in the detail of the following cases. And here I would observe, that all the operations which it has fallen to my lot to perform with the forceps are here set forth; there are none concealed. I have not selected cases favour-



able to my views, and left the unfavourable ones behind in my note-book ; but all are given, and all are favourable. I look upon this fact as most important, because it is likely that if the lacerations, contusions, and other evil consequences, that haunt the imagination of some practitioners, were actually attendant on the operation, it is likely, I say, that I would have encountered some of them ; it is not probable that such good luck would have been constant in my hands, and that all my patients would have escaped.

**CASE I.**—Age 36 ; seventh pregnancy. All her former labours had been very long and difficult, and in two of them the children had been still-born. The labour set in strongly, and the os uteri dilated slowly. It yielded after twenty-four hours had elapsed, and the head entered the brim of the pelvis. The pains continued strong during the ensuing twelve hours, and the head was slightly advanced during that time. At the end of this period, being thirty-six hours from the commencement of labour, the pulse became a little accelerated ; but as there was some continuing advance of the head, the labour was allowed to proceed. In six hours thereafter the head had passed to the extent of about two-thirds through the brim of the pelvis, and appeared tightly jammed in the aperture. The patient's pulse was still faster than before, but no tenderness of the belly was complained of. Her strength being good, and the pains regular, it was not judged necessary to interfere ; but at the end of forty-eight hours from the beginning of labour unfavourable symptoms had fully appeared. Her pulse was now 120 ; the pains had greatly diminished ; her strength was failing ; and she suffered considerable pain on pressing the abdomen. Her stomach had become irritable, and rejected her drinks. Under these circumstances the forceps were applied. It required some care and patience to get the blades of the instrument into their place ; but at last it was accomplished, and by slow degrees, and well graduated lateral motion of the instrument, the head was dislodged from its position, and brought down to press upon the perinæum. The rest of the operation was sufficiently easy. The child was extracted still-born. This woman suffered a good deal from inflammation of the vagina, which was subdued by fomentations, injections, and poultices, but no sloughing took place. She left the hospital in a fortnight, quite well. I regretted at the time, and still continue to do so, that I had not performed the operation at the end of thirty-six hours, instead of waiting to forty-eight, as I have no doubt the inflammation of the vagina would have been prevented thereby, and decidedly the child would have had a much better chance of being born alive.

**CASE II.**—Age 28 years ; seventh pregnancy. This woman had borne six children, in the delivery of which she had always difficult labour, and the last child had been extracted by the perforator and crotchet by another practitioner. In this labour the head presented in the first position, and it was evident that the brim of the pelvis was somewhat in its antero-posterior diameter. A considerable opposition to delivery, also, arose in this case from a convergence of the spinous processes of the ossa ischia, which encroached upon the cavity of the pelvis, and resisted the passage of the head. At the end of 24 hours, finding from these two causes the progress of delivery impeded, the head having come down to rest upon the spinous processes below, while the remaining portion was engaged in the brim of the pelvis ; perceiving that there was little prospect of delivery being accomplished by the natural efforts ; and having the former labours as a guide as to what was to be expected, I determined not to wait too long without attempting to rescue the infant from its perilous situation, if it were consistent with the mother's safety. Accordingly the forceps were cautiously introduced, and as cautiously used as an extractor ; and in half an hour from the commencement of the operation, I was gratified by the birth of a living boy, who with his mother continued to do well, until they left the Hospital on the tenth day.

**CASE III.**—Age 36 years ; ninth pregnancy. In this case the head presented in the fourth position of Naegele ; and instead of changing to the first in the course of the labour, as it usually does in this presentation, it continued to descend with the anterior fontanelle towards the pubis. At the end of twenty-four hours (labour being very severe) the head was firmly fixed in the pelvis, and in six hours more (thirty) finding that no advance had taken place, and the vagina was becoming tender to the touch, while the pulse was gradually increasing in frequency, delivery was effected by the forceps. The child was dead. This patient recovered without any unpleasant symptom.

**CASE IV.**—Age 30 years ; fourth pregnancy. This was a footling presentation, and the labour went on without anything remarkable, until the arms had been extracted, when great difficulty was found in the passage of the head. The labour pains continued strong, and the cord pulsated for a considerable time during the endeavours made to extricate the head. But all attempts to accomplish this in the ordinary way having been tried for nearly half an hour, and failed, and finding the pulsation in the funis becoming weak, I determined upon using the forceps. Unfortunately some delay took place in procuring the in-

strument, which was fatal to the infant; for, before its arrival, the cord had ceased to pulsate. I passed the blades along the sides of the face and head, having the body of the infant carried forward between the thighs of the mother, and with some difficulty I succeeded in extracting the head. The mother did well.

All these cases occurred in women who had previously borne children; but I now come to a class of patients in which the employment of the instrument is by some deemed inadmissible and improper. I allude to women in labour of first children, and it will be seen by the sequel whether the dread of the instrument in such case is well founded or not.

CASE V.—Age 25 years; first pregnancy. The head presented in the first position, and the labour progressed steadily and slowly, so that at the end of twenty-four hours the os uteri was completely dilated, and a portion of the child's head had entered the brim of the pelvis. The pains continued severe and constant, and at the end of thirty hours the greatest portion of the bulk of the head had passed into the cavity of the pelvis, but not so low as to fill the hollow of the sacrum, or make any pressure on the perinæum.

From this time there was no advance in the progress of the head, but a very large tumor formed on the scalp. In this condition the head remained for six hours, notwithstanding frequent and strong pains. The woman was now thirty-six hours in strong labour. It was plain that the natural efforts were unequal to overcome the difficulty. The pulse had risen to 110, and great restlessness had commenced. By the stethoscope the child was found to be alive; but how long it would remain so under such severe pressure was very doubtful. I therefore determined to give it a chance for life. The forceps were applied slowly and cautiously; and when introduced the blades lay one behind the pubis, the other along the sacrum. This shews the position of the head; that it had not turned from the oblique position. By grasping the handles loosely, and swaying them back and forward, two or three times during each pain, without as yet using much extracting force, I loosened the head in its position; and then gradually caused it to descend, and in twenty minutes a living boy was delivered without a single fibre of the perinæum having been damaged; a careful assistant having duly supported that part. The mother and child left the hospital the same day.

[The author details ten more cases, and then makes the following observations.]

In these fifteen cases, the operation was performed with complete success, as far as the mother was concerned; not a fibre of the perinæum was torn in any of them, although eleven were first deliveries. In one case only local inflammation followed the opera-

tion, and in that case (the first), I have already said that I delayed to interfere longer than I ought, and the result to the mother and child is evidence that procrastination was fatal to the latter, and caused the local, but temporary, inconvenience to the former. Of the fifteen children, seven were born alive, and eight dead; but of these, six were born under circumstances that would have caused a similar result independently of the operation. Thus, in three of the cases, VIII. X. XII. ergot of rye had been administered some hours previous to delivery. Now it is well known that when a certain time elapses between the administration of this drug, and delivery, the child is most commonly still-born. It is difficult to state exactly what length of time is required to cause the death of the infant in such cases; but I have reason to believe, from some observations I have made, that in two hours after a full dose is given, the foetal heart will cease to pulsate. In the cases above alluded to, a greater length of time than that intervened between the taking of the medicine and the delivery of the patient. The death of these children therefore cannot be ascribed to the operation. Two cases (VII. and XV.) were attended with convulsions, an accident that notoriously destroys the life of the foetus before birth. And the case (IV.), in which the footling presentation occurred, must also be struck off the list, inasmuch as the funis had ceased to pulsate before the operation was commenced. We thus have the cases in which it is fair to estimate the value of the operation with regard to the infant, reduced to nine. In seven of these, living children were born; and of the two that were dead, I have reason to think that the result was owing in one of them (I.) to the delay of a few hours after urgent symptoms had become manifest.

It is not consistent with the nature of this communication to enter upon any minute description of the operation with the forceps; but I cannot conclude without making a few observations upon the form of instrument most suitable, in my mind, to those cases in which the head is arrested in the pelvis, before it has come down to touch the perinæum. In such a position, a longer instrument than that in common use will be found of great advantage; and a blade constructed as in the accompanying sketch will be more easily introduced, and when both blades are passed along the head, the handles will be more readily locked together than when the usual form is given to the instrument. The entire length including the handle is  $12\frac{1}{2}$  inches. Of the blade to the lock, 8 inches; of the fenestrum,  $5\frac{1}{2}$  inches; the greatest breadth of blade  $1\frac{1}{2}$  inches; the widest part of the fenestrum, 1 inch. The distance between the blades when joined, three inches at the widest part; distance between the extreme points,  $1\frac{1}{2}$  inch. The sides of the blades

enclosing the fenestra are nearly round, slightly flattened upon the inner and outer surfaces, but having no sharp edge, either on the outer border or the margin of the fenestra. The advantages that such an instrument possesses over others are, first, from its narrowness, the blade is more easily introduced. Secondly, when both blades are applied, the handles can be locked with greater facility, and from the length of the blades the lock will not be within the vagina. Thirdly, from the rounded form, there is no danger of hurting the mother in the introduction, or of cutting the scalp of the child's head with the inner edge of the fenestra in its extraction. This is a point upon which too much stress cannot be laid in ordering or choosing an instrument, for most of those that are found at cutlers' are finished with such sharp edges, that both mother and child are in danger of being injured by their use. With such an instrument as I have described, and with an accurate knowledge of the anatomy of the pelvis, and of the mechanism of parturition, it will be difficult (if reasonable caution be used) to inflict any violence upon either of the objects of our care. But a clear view of the relation that the brim, cavity, and outlet of the pelvis bear to each other, and the line described by the axis of the entire cavity, must be entertained by the operator, to insure a successful termination\*.

## MEDICAL REFORM.

*To the Editor of the Medical Gazette.*

SIR,

I HAVE been, for many years a quiet observer of the progress of opinions respecting medical reform. A constant reader of your valuable journal, it has afforded me much pleasure to observe the manly and temperate course you have adopted, and I should have considered it little better than presumption on my part to have offered to the public my views upon the subject, had they not so nearly approximated to your own, and to those of many distinguished members of our profession. If, where my opinions agree with your own, they should tend in some slight degree to confirm your views, and where they differ they should call forth from yourself, or other equally competent judges, a still further consideration of the points of difference, I shall feel amply repaid (be the result what it will), in feeling that I have not been altogether an idle or useless spectator of passing events.

I shall not consider it necessary, in all cases, to point out where my views correspond with those of yourself or other

writers upon the subject, but simply go on to state the ideas which have long occupied my mind on this momentous subject. I say momentous, for no one can feel more strongly than I do the general interest and importance of the subject. Sir James Clark, as well as yourself and many others, have well and truly remarked, that this is no question limited to a small party of professional men, but is one of vital interest and importance to the people at large.

No small section of our profession have advocated the "one faculty system"; let us, however, look at the nature of our avocations—a single glance at which will point out the threefold nature of our profession. The pure physician, whose avocation it is to deal with such diseases as require no manual skill in operation; the pure surgeon, whose name well defines the nature of his office; the pharmacist, skilled in the qualities and modes of preparation of those drugs which form the weapon of the physician and the surgeon.

Out of these natural divisions of professional labour springs one other division—a distinction derived, not from the nature of things, but from circumstances. A large portion of the population, not sufficiently wealthy to be able on all occasions to secure the services of the pure physician or surgeon, require other assistance. A district too thinly populated to afford a living to a resident physician or surgeon, may afford to another class of practitioners an ample income, derived from a most honourable and useful life. I allude, of course, to the general practitioners, who, whether from their superior numerical proportion, or from the greatly larger field of their practical usefulness, may well be said to require the support and protection of the legislature.

Simple as this view of the subject may appear, I am persuaded that it is the correct one, and that it would stand the test alike of practice as of theory.

I shall next proceed to inquire how far existing laws and institutions correspond with, and bear out, this natural arrangement of our profession, and then attempt to point out, or rather hint at, such alterations as, being enforced with the least shock to ancient and valuable institutions, may yet be best calculated to establish our profession upon the basis of mutual union, and support and render it most stable in itself and most useful to the public.

To begin, then, with the department of the pure physician. Let us ask, from whence does the English physician obtain his diploma and his dignity? From whence does the public receive its assurance of his competency to fill the office of his calling? To what body is he amenable for mal-practice, or for conduct obnoxious to the public, or his fellow-practitioners? What common

\* Dublin Journal of Medical Science.

body casts upon him a ray of the lustre of the illustrious dead, or links him in vital union with the eminent of his own age?

Here unfortunately in the very threshold of our inquiries we meet with the greatest inconsistency—the greatest want of uniformity. With the exception of the universities of Oxford and Cambridge, the College of Physicians of London has nearly up to the present day been the only corporate body empowered to license practising physicians; and yet it is probable that not a fifth of the physicians practising in England are members of this body. Whence, then, does this arise? From any incompetency on the part of the College to ascertain the merits of candidates for its diploma? Surely not. From any disrespect for that body which prevents persons applying to them for their diploma? Surely, to be classed with Harvey, Sydenham, Heberden, Baillie, of by-gone days—or with Halford, Chambers, Marshall Hall, Bright, Latham, and a host of most excellent practical and scientific men of our own—is an honour to be desired, not an evil to be shunned.

The simple solution of the problem is this—the College is wanting in the power of enforcing the necessity of their diploma: hence what is not absolutely necessary is not universally required. Were it not for the restriction placed upon the church, by which no person can be ordained without a title for orders, and the power which our universities and bishops possess of preventing any from entering holy orders but by their sanction and under their examination and approval, what hosts of clergymen would there be, who, willing to avoid the more expensive and arduous road to clerical promotion, would seek to discover a cheaper and an easier path.

The College of Physicians, in antiquity the most venerable institution in our profession, was at first established chiefly in connection with the metropolis and the English universities. Too slow to extend its usefulness by demanding fresh powers and new charters, it has lived to see the day when its influence has been lessened by its inadequacy to meet the public wants.

The increased population and augmented wealth of the country—perhaps also the increased intelligence of the community—has caused a greatly increased demand for consulting practitioners; and we now find hardly any town of importance that is not supplied by one or more physicians. How few of these are members of the London College! What a medley of degrees and diplomas! What a mass of practitioners with no interest in common among themselves, or with the rest of the profession! Oxford, Cambridge, the London College of Physicians, Edinburgh, Glasgow, Aberdeen, Dublin,

Paris, Heidelberg, and fifty other places—to say nothing of His Grace the Archbishop of Canterbury—vie with each other to supply the demand for physicians. Surely such things should not be. A great mass of the provincial physicians have been raised from the ranks of the general practitioners, many of whom have proved themselves most honourable as men, and most useful and intelligent practitioners. I should be the last to offer any prohibition to the creating of physicians out of the rank of general practitioners. It is not with the practice I find fault, but with the manner in which it is done. Let each general practitioner judge for himself whether he would prefer the career of a physician or consulting-surgeon to that in which he is placed; but let his promotion to such office be through the test of competency submitted to a proper and uniform ordeal, and let him not be a self-created physician. But more of this anon.

Next in order comes the office of the surgeon. Here fortunately we have less of confusion. One corporate body only licenses the English surgeon—a corporation which, though comparatively modern in its origin, and but ill protected by the laws, yet numbers in its list every English surgeon of eminence, and almost every practising surgeon, whether metropolitan or provincial. As a professional body I know of no other so much the object of congratulation to our country as the College of Surgeons.

The chief fault in the constitution of the College of Surgeons, and this I shall speak of more fully hereafter, is a want of division of members. Operative surgery requires a more accurate knowledge of anatomy, and more nerve, than can possibly fall to the lot of every gentleman who appends the title of M.R.C.S. to his name. It is, therefore, desirable that the public should be well acquainted who of its members are to be entrusted with this most useful and delicate branch of the profession, and who are not: and this would be simply and easily obtained by dividing the members into fellows and members, or some such distinction; requiring of the fellows a longer and more arduous course of anatomical and surgical studies, and a competent test of their skill and ability to undertake the higher operations in surgery.

The last natural division of medical labour falls upon the pharmacist, whose office it is to be well skilled in the qualities, properties, and compounding of those drugs which constitute the weapons of the physician and surgeon. To what body of men can we look as the representative of this most useful, most important branch of our art? To whom can the public look for protection?

The chemist and druggist, as at present constituted, however skilled in the knowledge



of his art, has no means of publicly proving his skill. No diploma, to show that he is as well qualified to buy, mix, and dispense his drugs, as his neighbour. Admiring as I do that energy by which the Society of Apothecaries have arrived at a post so distinguished and so useful as they have, I cannot, however, award them this palm, inasmuch as that it is my honest conviction that nine-tenths of the practising apothecaries, if as well, are at least no better skilled in the knowledge of drugs, their distillations, their adulterations, their compounding, &c. than are their neighbours, the chemists, to whom, in fact, they almost universally look for their own supplies. Here, then, would appear to be a complete gap to be filled, an "hiatus maxime deflendus" in our profession.

Having gone through the natural divisions of professional labour I now come to that division which, though not existing in the nature of our avocations, yet arises out of the application of them to the public good. The utility of such a division, as regards the public, has been already hinted at, and it may not be amiss to take into consideration one or two points as regards the benefit of such a division to the profession itself. Woe be to that profession which contains no grades of honour or distinction—no motive for exertion but gain. The church, the army, the navy, the bar, all have their grades of distinction. Without them what chaos and confusion would reign! Indeed, such distinctions lead to the increased dignity as well as usefulness of the whole body. The honours conferred upon a Nelson or a Wellington are honours conferred upon their professions at large; for they are honours conferred for professional services; and so it is in medicine. The services which have procured baronetcy to Sir Henry Hallford, will at least procure him distinction and respect. How, then, does the division of medical labour here advocated operate? Why, if it devolved upon our eminent physicians to cup and bleed their own patients in every case, and to superintend the dispensing of the remedies they prescribe, how would they find time to amass those fortunes which, being commensurate with the dignity of their positions, give stability to the honours conferred upon them? How (and this is a much more important question) would they find time to amass that store of practical skill and knowledge which, by being made public through the medium of their writings and lectures, circulates, if I may so say, through the capillaries of our medical system, and, like the heart's blood, returns to them invigorated in its circulation, by the removal of some of its impurities, and the addition of new and confirmatory facts. How, then, is the public supplied with this most valuable body of men, the general practitioners? Practically

speaking, as regards their competence to perform the offices required of them, it must be on all hands confessed they are well supplied; and I suspect that the general clamour for medical reform, whether "extra or intra muros," in no way arises from the inadequacy of this class of practitioners.

There are in fact some anomalies as regards the working of this system. In the present day almost all general practitioners are members of the College of Surgeons and Apothecaries' Company, and I think I shall be able to show in the sequel that the awkward position in which the general practitioner is often placed arises out of the want of division of the surgeons into two classes—fellows and members; and the combination of two distinct offices in the Apothecaries' Company, that of professional adviser and mere vender of medicines, which, in my opinion, are incompatible.

Hoping to follow up this subject in an early number of your valuable periodical,

I remain, sir,

Your obedient servant,

PHILOMATHES.

July 6, 1842.

## REMUNERATION OF MEDICAL PRACTITIONERS.

*To the Editor of the Medical Gazette.*

SIR,

I AM directed to forward you the enclosed, and to beg your notice of it in the GAZETTE, on behalf of the profession, and if convenient, its insertion. Oppressive measures on the part of the guardians of the Tending Hundred Union have compelled the profession to combine for the resistance of oppression and the assertion of its own rights.—I am, sir,

Your obedient servant,

SAMUEL A. PHILBRICK.

Colchester, June 29th, 1842.

At a Meeting of Medical Practitioners, held at Colchester, on Tuesday, June 28th, R. Nunn, M.D. in the chair, it was resolved unanimously—

1st. That the remuneration afforded to medical officers under the Poor-law Act is insufficient and unequal; and the system of attaching medical clubs to Unions, at very low rates, is an oppressive and unconstitutional interference with the just rights of the profession, which loudly calls for alteration and redress.

2d. That the following petition, embodying these sentiments, be presented to the House of Commons, soliciting the enactment of a determinate scale of remuneration, upon fixed and equitable principles: and



that the Members for the County be requested to present and support the same.

*"To the Honourable the Commons of Great Britain and Ireland, in Parliament assembled."*

*"The humble Petition of a numerous Meeting of Medical Practitioners residing in the Northern Division of the County of Essex and its Vicinity,"*

**"SHEWETH,**

"That, in the opinion of your petitioners, the medical regulations lately issued by the Poor-law Commissioners are exceedingly defective, inasmuch as they contain no determinate scale of remuneration for medical officers, but leave this entirely to the arbitrary appointment of the different Boards of Guardians, by which, in many instances, great injustice and inequality exist.

"That it appears, from returns made by your Honourable House, that the average amount paid to medical officers of Unions in the metropolitan districts is about 1s. 5½d. per case; that in rural districts it rises to 3s. 3½d. only; while it has been ascertained, from accurate calculations made upon an extensive scale, that in dispensary and hospital practice (which form a just criterion in the matter) the cost of medicines alone, independent of any remuneration for skill and loss of time, amounts to about 4s. 3½d. each case.

"That, in addition to the inadequate payment thus afforded for medicines and attendance for the pauper population, your petitioners have further to complain that a most oppressive and degrading system has been imposed upon them, under the denomination of 'Medical Clubs;' by which medical officers become bound to extend the same privileges to a large class of the community, upon terms so low as most essentially to interfere with the just remuneration for their labours, to which, as citizens of a free country, and members of an enlightened profession, they feel themselves entitled.

"Your petitioners therefore approach your Honourable House, respectfully but earnestly soliciting your attention to this subject, convinced that a full consideration of the same must lead to the adoption of such measures as shall secure for the medical profession in England and Wales a fair and equitable remuneration for their services to the poor, and a freedom from all unconstitutional restraint in the practice of their profession.

"And your petitioners will ever pray.

"Signed on behalf of the Meeting,

"R. NUNN, M.D. Chairman."

3d. That the following memorial be presented to the Honourable the Poor-law Commissioners, calling their attention to the same subject, and requesting their interposition in putting an end to the absurd in-

equalities in the salaries and remuneration of medical officers, and in the establishment of a fixed scale of payment for the whole country:—

*"To the Honourable the Poor-law Commissioners."*

"The undersigned medical practitioners of the Northern Division of the County of Essex, in public meeting assembled at Colchester, the 28th day of June, 1842, having taken into consideration the interests of the profession as affected under the Poor-law Amendment Act, resolved respectfully to memorialize your Honourable Board upon the following points:—

"First,—It appears to your memorialists that by establishing, in place of the present varying rates of remuneration adopted by the several boards of guardians, an adequate and uniform rate of payment, much dissatisfaction and contention among the members of the profession would be prevented; that the intentions of the Legislature to provide efficient and immediate medical attendance upon the sick poor would be more satisfactorily carried out; and that, by this means, the assistance of the best qualified practitioners in the immediate neighbourhood would be insured.

"Second,—It is considered objectionable and injurious to the honour and welfare of the profession, that in the formation of poor sick clubs the rate of payment of each member should be fixed by the boards of guardians, and that the acceptance of such clubs should be compulsory. In confirmation of the points of this memorial, your memorialists beg to call the attention of your Honourable Board to the late proceedings of the Tendring Hundred Board of Guardians, which are at present before the Board, and which your memorialists consider degrading and oppressive."

4th. That the medical officers of the Tendring Union feel deeply indebted to the Colchester Medical Society, and to those gentlemen present unconnected with the Unions, for the promptitude and warmth with which they have espoused their cause, and beg to offer them their sincere thanks, and request the Colchester Medical Society will continue to watch over the interests of the medical departments in the different Unions of the Northern Division of the county.

5th. That the foregoing resolutions be published in the *Essex Standard*, *Chelmsford Chronicle*, and *Essex, Herts, and Kent Mercury*.

6th. That the thanks of this meeting be given to the Chairman for his conduct in the chair.

R. NUNN, M.D. Chairman.

REPORT OF THE  
OBSTETRIC DEPARTMENT OF THE  
PHILADELPHIA DISPENSARY.

ONE hundred and twenty-six women have been delivered, all at full term, except one at seven and a half months, one at six and a half months, and one at five and a half months.

The average duration of labour in ninety-eight of these cases was nine hours; the extremes being thirty minutes and ninety-six hours.

The average amount of time required for the spontaneous delivery of the placenta in ninety-two cases was fifteen minutes and a half; the extremes being five minutes and five hours.

The introduction of the hand for assisting the delivery of this mass was necessary in six cases, after a delay of one, one and a half, two and a half, three, and five hours. In five of these cases the placenta was merely *retained*, either from torpor of the uterus, or from the manner in which the mass presented at its orifice. In the sixth case, however, the placenta was adherent by a considerable portion of its surface, and required manual dexterity to separate it.

In one of the cases of retained placenta, the uterus had become so completely torpid, that it failed to contract efficiently under the use of two scruples of the ergot in powder, and two drachms of the wine of ergot, given at the end of an hour after the expulsion of the foetus. The uterus was finally excited to action by the insinuation of the fingers between its anterior lip and the placenta.

The ergot was also administered, in one case, to excite the contractions of the uterus, which had fallen into a state of atony at the end of the first stage of labour. It acted promptly and safely. The patient stated that she had been subjected to the use of this article in all her five previous labours.

The forceps were indicated, and resorted to in three instances. In the first of these, after the vectis had been employed to convert a sincipital presentation into a fifth occipital, and then to a first position, these instruments were introduced with a view to save the patient from a state of exhaustion, into which she was rapidly sinking.

In the second case they were employed to terminate labour in a woman four feet six inches high, who has in her two previous labours required instruments. (In the first, the crotchet was used.)

In the third case, the instruments were resorted to, to complete delivery, after an ineffectual but severe labour, which had continued seventy-two hours.

There were seven cases of well-marked

uterine hæmorrhage after delivery. Five of these were promptly amenable to free frictions and tight bandaging, while the other two demanded most assiduous attention, to avert the imminent danger to which the patients were subjected. The first of these cases has entirely recovered. The subject of the other case was somewhat advanced in phthisis, having apparently a large cavity in one of the lungs. The labour proceeded regularly, and terminated spontaneously in two hours, and the placenta was extracted in fifteen minutes. Shortly after having been bandaged, and properly adjusted in the bed, she became very faint, and hæmorrhage, at first concealed, soon developed itself to an alarming degree, causing rapid exhaustion. By the free use of wine of ergot, mixed with brandy, together with friction and powerful compression of the abdomen, the flow was staunched. After remaining in a very doubtful state for two or three days, she began gradually to rally. In the course of the fifth day she had a return of the uterine pains, and then threw off a mass of coagulated blood, in which the fibrous laminae were so conspicuous as to cause it strongly to resemble a fibrous polypus.

The woman who aborted at five and a half months had hæmorrhage for several weeks before the ovum was thrown off. The tampon, &c. had to be resorted to, to prevent her perishing from exhaustion.

Several of the patients suffered much with irritability of the distended uterus, with occasional severe contractions, several weeks before delivery. They were relieved by venesection, laxatives, and emollient frictions to the abdomen. One patient had the liquor amnii escaping from the uterus during a whole month, and another during a whole week previous to delivery.

During the first and second quarters of the year, a number of the patients were attacked with different degrees of inflammation of the uterus and peritoneum. They all recovered under persevering treatment.

The number of children born of these 126 cases has been 126; viz. 72 boys and 54 girls; of these, 123 were at maturity, one at seven and a half, one at six and a half, and one at five and a half months.

Five children were still-born; of these, two were in apparently healthy condition; one of these two was the subject of a breech presentation, in which the head became locked in the pelvis, and strangulation took place before proper assistance could be rendered. The other was delivered before the attendant could be apprised that the patient was in labour, which continued only two hours. On one of the parietal bones of this child a deep indentation was found, with the scalp adhering closely to the depressed bone,

and without any evidence of recent contusion.

Two others were born in a semi-putrid state, and the fifth was barely alive when delivered at five and a half months of its foetal development.

Three children died within a month after birth, life terminating in convulsions, in two cases apparently with meningitis; one of these children was born at seven and a half months.

The remaining children and the mothers of all were doing well at the close of the term of our attendance upon them.—*American Journal of the Medical Sciences.*

## RUPTURE OF THE UTERUS

AFTER THE ADMINISTRATION OF ERGOT OF RYE.

A PRIMIPARA, 20 years old, well formed, had become pregnant without any unfavourable symptom. The early pains had shewed themselves in the usual manner; and three or four hours after the commencement of the labour the os uteri was almost completely dilated, and the bag of waters ruptured. Every thing promised a speedy termination, when, to accelerate the descent of the infant, the person who assisted at the accouchement administered one drachm of the ergot of rye in four doses, at intervals of five minutes. The uterine contractions were exerted with redoubled violence; but the result was far from that desired; for the head, instead of descending, mounted up again to the upper part of the pelvis, and could not be distinguished per vaginam. The attendant, frightened at this occurrence, called in M. Delmas, who found the patient in a state of extreme anxiety, suffering under frequent faintings and vomitings. The presence of a rounded tumor, easily distinguishable at the left inferior part of the abdomen, led him to fear that the uterus had been ruptured; and on exercising traction on the feet of the infant per vaginam, the abdominal tumor was felt to disappear; it was, in fact, the head which had escaped from the uterus into the abdominal cavity. Three days afterwards the unfortunate patient sunk from peritonitis.

CASE II.—A woman, 24 years old, pregnant for the third time. Labour had lasted ten hours, when the person in attendance thought it necessary to accelerate its progress, and prescribed a drachm of ergot of rye in four doses. After the third dose vomitings and excessive anxiety supervened. M. Delmas being called in, recognised the bladder full of urine, and perceived a tumor,

which he judged to be occasioned by the feet of the infant in the hypogastrium. Having emptied the bladder by means of the catheter, he delivered the child, but ascertained that the uterus had experienced a solution of continuity, and the patient died in sixteen hours.

These two cases warn practitioners against the inconsiderate use of ergot of rye with the view of accelerating labour. Indeed, this medicine should only be given in cases of inertia of the uterus. When, on the other hand, the contractions of the organ are active, rupture is risked by its employment; especially if there exists any obstacle to the passage of the child, as, in one of the above cases, the distended bladder prevented the descent of the foetus. In such circumstances the uterus may be excited to efforts which will not unlikely terminate in rupture.—*Journal de Médecine de Montpellier.*

## DISSOLUTION OF URINARY CALCULI.

THE experiments of M. Leroy with regard to the dissolution of urinary calculi, continued during two years either in the laboratory, or on those afflicted with this disorder, led him to the following conclusions:—1. Certain acid and alkaline reagents exert on urinary concretions a destructive influence, which is very slow, even when the operation is carried on in inert vessels, and which affects principally the animal matter contained in these concretions. This corrosive action is sometimes impeded by the formation of new deposits, the production of which appears to result from the saturation of the free acids or acid salts of the urine. 2. Without absolutely denying the possibility of obtaining some successful results, it may be laid down as a general rule that unless the size of the stone be very small, it will not be destroyed by reagents employed in baths or drinks used by the patient. 3. These same reagents introduced directly into the bladder exert a more powerful influence; but, in addition to the vital reaction of the organ, which often gives rise to inflammatory attacks, we meet in the application of these means with difficulties and obstacles which lengthen the treatment and render the success doubtful. 4. The combination of lithotripsy with solvent media, would have the advantage of favouring the action of the latter, by increasing the points of contact; but it does not seem rational to adopt as an ordinary method this combination, which is applicable only in a few exceptional cases.—*Archives Générales de Médecine.*

### QUININE FOUND IN THE URINE AND IN THE BLOOD.

ON examining the sediment formed in the urine of a patient to whom quinine had been administered, on account of periodical nervous pains, M. Landerer found, besides the phosphate and urate of lime, and carbonate of ammonia, a small quantity of quinine in a free state. The urine itself contained sulphate and hydrochlorate of ammonia, and also some traces of quinine. In two other patients to whom quinine had been administered for the cure of intermittent fevers, M. Landerer endeavoured to discover this alkaloid substance in the blood. One was bled for a pleurisy which supervened; the blood was inflammatory, and the coagulum covered with a thick buffy coat. When first drawn from the vessel, and so long as it preserved its heat, it had but a very slightly bitter taste; but after it had become cold, and the formation of the clot had taken place, the bitterness was very marked. A perceptible difference was discernible between the serum and the coagulated portion, the bitter taste being most marked in the former, and the quinine could be obtained from it by evaporation; then digesting the residue in acidulated water, filtering, and precipitating it by ammonia. In the second patient the analysis of the serum gave exactly similar results.—*Reperitorium für die Pharmacie*.

### POST-MORTEM APPEARANCES IN DIABETES.

AN officer, who had suffered from the month of October 1840, under diabetes insipidus, against which all the remedies usually employed had been tried ineffectually, such as creosote, quina, opium, steel, a purely animal diet, &c. died in July 1841. Although the quantity of urine daily secreted was very great, the strength of the patient was sustained for a considerable time; but in the course of the affection a purulent deposit shewed itself in the urine, at the same time that a slow fever arose, which, added to the progressive increase in the quantity of the urine, accelerated the fatal termination.

On the examination after death, all the parts of the body were found in a healthy state, with the exception of the urinary organs. The two kidneys presented the appearance of large sacs, and were twice their natural size. The renal substance was entirely destroyed, with the exception of some portions of the cortical part, which were indurated and tuberculous. The bladder was much larger than usual; its walls softened

to such a degree that they were easily broken down under the handle of the scalpel, and the internal surface of its mucous membrane ulcerated in its whole extent. The prostate gland larger and firmer than natural.—*Medicinische Zeitung*.

### SYPHILITIC RETRACTION OF MUSCLES.

THIS is a disease of rare occurrence, and which has only of late received attention. It affects most frequently the flexor muscles of the fore-arm, if we may be allowed to form an opinion from the generality of cases observed at the venereal hospital, under M. Ricord. The three patients who presented this remarkable affection had arrived at that point of constitutional infection characterised by the symptoms which are denominated tertiary by M. Ricord. In all these the retraction was very similar; the flexors of the fore-arm being affected by it. The muscles appeared shortened, as a result of the permanent contraction, which did not permit the extension of the fore-arm; but their tissue, though firm, presented no appreciable alteration. An important symptom was the peculiar pain which existed in the contracted part; this pain was increased at night, and resembled closely that experienced in syphilitic affections of the bones. In one of the patients the retraction was co-temporary with tertiary ulcerations of the throat; in another with periostitis of the tibia. These patients were submitted to the treatment of iodide of potassium. The success, under its influence, was as prompt and easily obtained as in other tertiary symptoms. The pains ceased in each case as soon as the fifth or sixth day. The movements of the limbs underwent a progressive amelioration, and were soon perfectly restored.—*Bulletin de Thérapeutique*.

### VACANCIES IN THE UNIVERSITY OF EDINBURGH.

THE chair of surgery in this university, and the chair of pathology, are now vacant; the one in consequence of the death of Sir Charles Bell, the other by the resignation of Dr. John Thomson. The election to the chair of pathology will take place on the 9th of August. Amongst the candidates are mentioned Dr. Craigie, Dr. Henderson, Dr. John Davy, Dr. Handyside, and Dr. J. H. Bennett. It is also reported that Dr. Home has at length tendered his resignation, and will be succeeded by Dr. Alison.—*Provincial Med. Journal*.

## DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, July 12, 1842.)

	PRICE.						DUTY and 5 per cent.	DUTY PAID.	
	£	s.	d.	£	s.	d.		Same time in 1840.	In 1841, to last week
Aloes, Barbadoes, D.P. .... c	10	0	0	to 25	0	0	{ B.P. lb 0 2 } F. lb 0 8 }	35,809	75,851
Hepatic (dry) BD..... c	5	0	0	10	0	0			
Cape, BD. .... c	2	0	0	2	8	0			
Anise, Oil of, German, D.P.... lb							F. lb 1 4	257	—
E. I. .... lb	0	6	0	0	6	3	E. I. 1 4	1,541	637
Asafoetida, B.D. .... c	1	10	0	3	0	0	c 6 0	5	14
Balsam, Canada, D.P. .... lb	0	1	0	0	1	3	lb 0 1	765	989
Copaiba, BD. .... lb	0	1	3				c 4 0	314	271
Peru, BD. .... lb	0	4	6				lb 1 0	798	615
Benzoin (best) BD..... c	25	0	0	50	0	0	c 4 0	14	57
Camphor, unrefined, BD..... c	16	0	0				c 1 0	152	401
Cantharides, D.P. .... lb	6	2	0	0	2	2	lb 1 0	3,574	7,925
Caraway, Oil of, D.P. .... lb	0	8	6	0	8	9	lb 4 0	124	785
Cascarilla or Eleutheria Bark, D.P. c.	1	10	0	3	0	0	lb 0 1	548	22,405
Cassia, Oil of, BD..... lb	0	7	6	0	8	0	lb 1 4	4,116	1,328
Castor Oil, East India, BD..... lb	0	4	4	0	4	6	c 1 3	{ 1,879	4,049
West I. (bottle) D.P. 1½ lb									
Castoreum, American .... lb	0	17	0	0	18	0	{ lb 0 6	124	235
D.P. Hudson's Bay .... lb	0	18	0	1	0	0			
Catechu, BD. Pale .... c	0	13	0	0	14	0	{ c 1 0	13,348	9,305
Dark .... c	0	10	6	0	11	0			
Cinchona Bark, Pale (Crown).... lb	0	2	0	0	3	6	{ lb 0 1	29,567	47,855
BD. Red .... lb	0	2	0	0	4	0			
Yellow .... lb	0	1	9	0	2	6	{ lb 0 2	1,121	5,282
Colocynth, Turkey .... lb	0	1	6	0	2	9			
D.P. Mogadore .... lb	0	1	0				lb 0 2	—	7,763
Calumba Root, BD. .... c	0	9	6	1	15	0	lb 0 6	9,946	18,351
Cubebs, BD. .... c	3	0	0	3	5	0	c 4 0	36	32
Gamboge, BD. .... c	10	0	0	22	0	0	c 4 0	241	287
Gentian, D.P. .... c	1	8	0				c 6 0	63	49
Guaiacum, D.P. .... lb	0	0	3	0	1	0	{ c 6 0	2,391	4,247
Gum Arabic, Turkey, fine, D.P... c	10	0	0	11	0	0			
Do. seconds, D.P. .. c	4	10	0	8	10	0	{ c 6 0	2,364	8,634
Barbary, brown, BD. c	2	5	0						
Do. white, D.P. .... c	4	5	0	3	6	0	{ c 6 0	97	67
E. I. fine yellow, BD. c	2	6	0	2	10	0			
Do. dark brown, B.D. c	1	5	0	1	15	0	{ c 6 0	15	31
Senegal garblings, D.P. .... c	4	10	0	8	0	0			
Tragacanth, D.P. .... c	7	0	0	0	0	3	lb 0 1	—	1,995
Iceland Moss (Lichen), D.P. .... lb	0	0	2½	0	0	3	lb 1 0	3,859	5,681
Ipecacuanha Root, B.D. .... lb	0	1	3				lb 0 6	15,924	21,431
Jalap, BD. .... lb	0	2	6				{ lb 0 3	3,898	7,023
Manna, flaky, BD. .... lb	0	1	6	0	2	0			
Sicilian, BD. .... lb	1	0	0	3	10	0	oz 6 0	1,643	515
Musk, China, BD. .... oz	5	0	0	14	0	0	{ c 6 0	391	554
Myrrh, East India, BD. .... c	2	0	0	11	10	0			
Turkey, BD..... c	0	8	0	0	9	0	lb 1 0	20,401	15,954
Nux Vomica, BD..... lb	0	7	6	0	8	0	lb 4 0	1,069	1,332
Opium, Turkey, BD. .... lb	0	7	6	0	8	0	lb 0 1	140,794	161,077
Peppermint, Oil of, F. BD..... lb	0	3	11				lb 1 0	4,707	14,090
Quicksilver, BD. .... lb	0	4	0	0	7	0	{ F. lb 1 0	5,398	9,936
Rhubarb, East India, BD..... lb	0	8	0	0	9	0			
Dutch, trimmed, D.P. lb	0	11	0	0	12	0	{ lb 1 0	2,020	731
Russian, BD. .... lb	2	2	0	2	6	0			
affron, French, BD. .... lb	0	1	0	0	2	6	lb 0 6	36,637	67,778
Spanish .... lb							{ lb 2 6	2,837	3,510
Sarsaparilla, Honduras, BD..... lb	0	12	6	1	0	0			
Lisbon, BD. .... lb	0	0	5	0	0	6	{ E. I. lb 0 6	27,237	51,587
Scammony, Smyrna, D.P..... lb	0	1	6	0	1	3			
Aleppo .... lb	0	1	0	0	1	3	{ Other sorts 0 6	22,084	40,410
Senna, East India, BD. .... lb	0	1	0	0	1	3			
Alexandria, D.P..... lb	0	1	0	0	1	3			
Smyrna, D.P. .... lb	0	1	0	0	1	3			
Tripoli, D.P. .... lb	0	1	0	0	1	3			

‡‡‡ B.D. In Bond.—c. Cwt.—B. P. British Possessions. F. Foreign.—D. P. Duty paid.



STATISTICS OF DISLOCATIONS.

M. MALGAIGNE, as we learn from the *Gazette Médicale*, has lately written a paper on this subject. The registers which he examined had often omitted to state what joint was dislocated. There were 491 cases, however, where the joint was specified; the dislocations being as follows:—

	No of Cases.
Of the shoulder . . . . .	321
— clavicle . . . . .	33
— elbow . . . . .	26
— radius . . . . .	4
— wrist . . . . .	13
— thumb . . . . .	17
— fingers . . . . .	7
— thigh . . . . .	34
— knee . . . . .	6
— patella . . . . .	2
— foot . . . . .	20
— jaw . . . . .	7
— spine . . . . .	1

He found that from the age of 2 to 15, dislocation of the shoulder occurred only once out of four dislocations; but after 60 years of age, once out of 1½.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

June.	THERMOMETER.		BAROMETER.	
Wednesday 29	from 51 to 74		30.03 to 30.01	
Thursday . 30	53	70	29.91	29.79
July.				
Friday . . . 1	49	62	29.72	29.82
Saturday . . 2	49	63	29.82	29.86
Sunday . . . 3	47	66	29.91	Stat.
Monday . . . 4	54	73	29.75	29.64
Tuesday . . 5	58	68	29.61	29.80
Wednesday 6	from 47 to 64		29.96 to 30.13	
Thursday . . 7	42	61	30.08	29.94
Friday . . . 8	49	64	29.78	29.61
Saturday . . 9	47	67	29.65	29.69
Sunday . . . 10	48	68	29.84	29.86
Monday . . . 11	50	74	29.69	29.62
Tuesday . . 12	53	71	29.80	30.00

Wind, S.W. on the 29th, and N.E. on the 30th ult.; N.W. on the 2d inst. and following days.  
On the 29th, clear. The 30th, cloudy and showery. The 1st and 2d inst. showery, with intervals of sunshine. The 3d, morning clear, afternoon cloudy. The 4th, rain in the morning, otherwise generally clear. The 5th and 6th, generally clear. The 7th, 8th, and 9th, cloudy, with rain. The 10th, and two following days, generally clear.  
Rain fallen, .62 of an inch.  
CHARLES HENRY ADAMS.

RECEIVED FOR REVIEW.

The Spas of Homburg, considered with reference to their Efficacy in the Treatment of Chronic Disease. By Sir Alexander Mackenzie Downie, M.D., Physician in Ordinary to her Royal Highness the late Landgravine of Hesse Homburg, &c. &c.

Mr. E. Lee's Translation of Aimé Martin's work on the Education of Mothers of Families; or, the Civilisation of the Human Race by Women. Being the work to which the Prize of the French Academy was awarded.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.  
Friday, July 8, 1842.

J. Hunt.—E. Cockell.—L. Roberts.—O. F. Heritage.—J. Moir.—J. Moore.—C. Hooper.—E. O. Lyne.—J. F. Nicholls.—W. Davies.—F. M. Clifford.—G. B. Clark.—T. Parr.—J. Cornwall.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.  
Thursday, July 7, 1842.

P. Milner, Wakefield.—E. Moore, London.—D. H. Bell, Haynes, Copford, Essex.—R. Davis, Cavan, Ireland.—T. Smith, Patrington.—G. J. Hilbers, Theydon Bois, Essex.—J. W. Metcalf, Canterbury.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, July 2, 1842.

Small Pox . . . . .	9
Measles . . . . .	25
Scarlatina . . . . .	15
Hooping Cough . . . . .	21
Croup . . . . .	7
Thrush . . . . .	2
Diarrhoea . . . . .	7
Dysentery . . . . .	1
Cholera . . . . .	3
Influenza . . . . .	3
Typhus . . . . .	16
Erysipelas . . . . .	0
Syphilis . . . . .	0
Hydrophobia . . . . .	0
Diseases of the Brain, Nerves, and Senses . .	128
Diseases of the Lungs and other Organs of Respiration . . . . .	231
Diseases of the Heart and Blood-vessels . . .	21
Diseases of the Stomach, Liver, and other Organs of Digestion . . . . .	57
Diseases of the Kidneys, &c. . . . .	7
Childbed . . . . .	5
Ovarian Dropsy . . . . .	0
Disease of Uterus, &c. . . . .	0
Rheumatism . . . . .	5
Diseases of Joints, &c. . . . .	7
Ulcer . . . . .	0
Fistula . . . . .	0
Diseases of Skin, &c. . . . .	1
Diseases of Uncertain Seat . . . . .	118
Old Age or Natural Decay . . . . .	44
Deaths by Violence, Privation, or Intemperance . . . . .	26
Causes not specified . . . . .	2
Deaths from all Causes . . . . .	753

NOTICE.—The letter of "T.W.G." would lead to a controversy, not in our opinion of sufficient interest to warrant our inserting it.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JULY 22, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Pathology of gout. Prognosis. Prejudices respecting the disease. Treatment: during the paroxysms; during the intervals. Cutaneous diseases.*

I YESTERDAY described the phenomena of gout, from its primary outbreak to its crippling consummation. I told you what observation has collected concerning its causes; and I pointed out the circumstances which distinguish it from rheumatism. Let us look a little closer into the essence of this curious malady.

The pathology of gout has been the theme of endless controversy. Humoralists and solidists contend alike for the triumph of including the disease within the pale of their respective theories. The very name, *gout*, derived through the French *goutte* from *gutta*, expresses summarily the doctrine of those who imposed it: and we trace the same, or a similar idea, in the appellation of the kindred disorder, *rheumatism*.

"The opinion (says Cullen) which has generally prevailed, is, that gout depends upon a certain morbid matter, always present in the body; and that this matter, by certain causes thrown upon the joints or other parts, produces the several phenomena of the disease."

You will find this doctrine at the bottom of all Sydenham's speculations on the subject. But Cullen doubted it, and even endeavoured, in an elaborate argument which you may read in his *First Lines*, to disprove it. He held gout to be an affection

of the nervous system. I shall not trouble you by detailing his argument, for I consider it an utter failure. I am satisfied that the ancient doctrine, which asserts the *humoral* origin of the disease, is the true one. "Morbific matter" (it may well be called a *poison*) is generated, or detained, under certain circumstances, within the body, and silently collects in the blood; until, after obscure threats, perhaps, and prelusive mutterings, it explodes in the foot: and then the bodily economy, like the atmosphere after a thunder-storm, is, for a while, unusually pure and tranquil. To some such conclusion as this the result of all modern research seems clearly and unfailingly to tend. Dr. Holland, for example, in his recently published, and thoughtful and thought-exciting, volume, expresses his belief in "a *materies morbi*, which, whatever its nature, is capable of accumulation in the system, of change of place within the body, and of removal from it." In this, and in several other propositions relative to gout, enunciated in distinct terms by this learned writer, I fully concur. Some speculations still more lately put forth by Dr. William Budd, in a communication to the Medical and Chirurgical Society, throw a strong light upon this perplexed subject; and bring the phenomena, not only of gout, but also of many other important complaints, within the operation of one general, comprehensive, and intelligible law. Although Dr. Budd's paper is not yet fully before the public, I shall take leave to refer, in a very cursory manner, to some of his positions.

I need not remind you of the various ways in which extraneous matters find entrance into the blood. Poisons, under their proper shape and name; medicines, which misapplied become poisons; our natural food and drink, which the folly of man converts into poison; the products or dregs of the secondary assimilative process: these are common sources of impurities, more or less hurtful, which mix and circulate with

the vital fluid. Some of these extraneous matters escape harmlessly by one or more of the waste-pipes and emunctories of the body. Some are entangled in its solids: but not indiscriminately; for different substances have their special or their favourite resting-places. All this is well known to persons conversant with toxicological researches.

Now this doctrine, of the elective affinity between certain tissues or parts of the body, and certain morbid principles conveyed to them by the blood, is applied by Dr. Budd to elucidate the very curious fact of the symmetrical local manifestations of many disorders; which disorders are themselves so far general that they derive their origin from the circulating fluids. This symmetry he finds the most exact in chronic constitutional complaints, wherein the local morbid changes are effected in a manner which approximates closely to the processes of healthy nutrition. He shews good reason for believing (what, if the whole theory be true, we should expect) that the same symmetrical phenomena are modified by the amount of the poison collected in the system. If there be a certain quantity only, it may settle in some favourite or congenial spot, on one side of the body. If there be more than enough to saturate that part, it goes next to the corresponding spot upon the opposite side; or, perhaps, to an analogous part of the other limb of the same side. If there be more still of the poisonous material, it flies to, and occupies, other parts also. He farther shows that the elective affinity is more exclusive, and the bond of union stronger, in respect to some morbid principles, than to others; and in proportion as the affinity is weak, so is the local manifestation of the disease apt to shift, by metastasis, from place to place. When the matter which has thus entered, or combined with, a certain tissue or organ, is anyhow loosened and released from that union, or repelled from the part, it is again set afloat in the blood, to "break out" elsewhere; to teaze various organs, perhaps, or to derange the whole economy. The alternation so often to be noticed between certain cutaneous eruptions and internal disorders of function, is a striking and familiar example of this. The eruption affords presumptive evidence of the imprisonment of some peculiar morbid principle in that part; and the internal affection which succeeds the disappearance of the eruption, denotes that the morbid principle has re-entered the blood. Some of these peccant or poisonous matters fix permanently in the affected spot or spots; and some of them may even be recovered in substance from the dead tissue by chemical means: the poison of lead, for example, from the symmetrically palsied muscles. Others appear to be expended gradually in

the part, and so eliminated from the system. Dr. Budd observes, that the regular arrangement of these local tokens, whether they be outward or internal, is disturbed by the presence of fever. Probably the febrile tumult may itself be owing to the quantity of the noxious matter in circulation within the body. He states, also, that, *cetero paribus*, this morbid matter is most apt to pounce, in the first instance, upon parts which have been previously hurt, or which are mechanically irritated at the time. For which reason a part that has once been affected by it is more likely than other parts to suffer again.

Now, see how thoroughly the ascertained phenomena of gout accord with this theory. Certain habits of life produce fulness, and richness, and impurity of blood; the same habits which breed the lithic acid diathesis. We may even conjecture this acid, or some of its compounds, to be the actual *materia morbi*. Lithates are poured forth with the urine, and sometimes deposited in vast masses around and within the gouty joints. At first, after obscurer intimations of the presence of the poison in the system, it thunders in the foot; and there, perhaps, is all discharged and spent. The chemist, Berthollet, found that the skin of a part affected with gouty inflammation communicated instantly to litmus paper a deep red colour: a large quantity of acid was evidently passing off by exhalation from the inflamed surface. If the poison be too copious to find sufficient vent in one joint, it attacks another, or more than one. "Quandoe etiam primis morbi diebus, cum materia peccans adeo exuberat ut ei capiendæ pes unus impar sit, utrosque simul vehementiâ fatigat: sed ut plurimum pedes successivè, uti diximus, adgreditur." These are Sydenham's words. A chain of repeated paroxysms at length purifies the blood: "donec tandem materiâ peccante prorsus absumtâ, oeger pristinam obtinuerit sanitatem." The descent of the disorder upon a particular joint is often determined by a recent blow or sprain, or by the chronic weakness consequent upon an ancient hurt. If the inflammation, after thus settling, be repelled from the foot, the poison, being driven again into the blood, may light upon some vital organ, and place the patient's life in immediate jeopardy. The late Dr. Parry, of Bath, had at one time under his care two patients who had attempted to cut short or to ease a paroxysm of gout by plunging the affected foot into cold water. This gave instant relief to the pain, and in both instances the inflammation presently abated; but in both, also, *hemiplegia* occurred a few hours afterwards.

If these views respecting the pathology of gout be true, it can scarcely be doubted

that they are applicable, *mutatis mutandis*, to the cognate disorder—acute rheumatism. Dr. Prout, indeed, considers the *lactic acid*, developed chiefly during the secondary mal-assimilation of the gelatinous tissues of the body, to have the same relation to rheumatism which the *lithic acid*, derived from the mal-assimilation of the albuminous textures, has to gout.

The prognosis of gout may be gathered, without much farther suggestion on my part, from what has already been said. The inflammation which befalls the joints has no worse event than the thickening, or, perhaps, the chalk-like deposit, which it produces; so that *gout in the extremities* is not a mortal disease. But as it is not always confined to the extremities, the life of a gouty person is justly held to be insecure. You will find that all insurance companies exact, *cæteris paribus*, a larger premium from those who have had the gout. When it proves fatal, it is by translation of the disease, or rather of the gouty virus, to some vital part; to the stomach, the heart, the lungs, the brain.

As the early visits of gout are generally followed by a striking change for the better in the health and feelings of the patient, it is not to be wondered at that the disease, in its genuine and decided form, should have sometimes been wished for, and even courted. It is commonly thought that a fit of the gout clears the system of all other disorders. It does, indeed, clear it, for the time, of those disorders which resulted from the poison of gout. But this fact has led to great practical mistakes. First, to the error of looking on inertly, and doing nothing to remedy the ailments which are supposed (often very wrongly) to depend upon lurking gout, and to require a fit of the gout for their cure; and, secondly, to the more dangerous experiment of endeavouring to force on such a fit by excess and intemperance. Men forget, or do not know, that the enemy thus reinforced, instead of evacuating the fortress by its outposts, may retreat triumphant into the citadel. To drop metaphor, such a course of living may, indeed, determine an attack of the disease in the extremities, but involves the fearful peril of some fatal internal seizure. Besides, the benefits expected from external gout belong to its earlier returns alone. The more numerous the fits, the faster does the general health break, and the more stubbornly do the associated symptoms cling to the patient: and many persons linger on, martyrs (as they say) to the disease, long after they have ceased to be fit for any of the business of life, or capable of any of its pleasures. Nevertheless, as Heberden observes, “people are neither ashamed nor afraid of it; but solace themselves with the hope that they

shall one day have the gout; or, if they have already suffered it, impute all their other ills, not to having had too much of that disease, but to wanting more. The gout, far from being blamed as the cause, is looked up to as the expected deliverer from these evils.”

And this mistaken ambition is heightened, no doubt, by the notion, still more absurd and ridiculous, yet very generally prevalent, that it is a *creditable* thing to have the gout: a notion which evidently originated in the fact of its being peculiarly incidental to the wealthy and the great, to men of cultivated minds, and intellectual distinction. Nothing can show more strongly the power of fashion than this desire to be thought to possess, not only the tone and manners of the higher orders of society, not their follies merely and pleasant vices, but their very pains and aches, their bodily imperfections and infirmities. All this is more than sufficiently ludicrous and lamentable: but so it is. Even the philosophic Sydenham consoles himself, under the sufferings of the gout, with the reflection that it destroys more rich men than poor—more wise men than fools. “At vero (quod mihi aliisque licet, tam fortune quam ingenii dotibus mediocriter instructis, hoc morbo laborantibus solatio esse possit) ita vixerunt atque ita tandem mortem obierunt magni Reges, Dynastæ, exercituum classiumque Duces, Philosophi, alique his similes haud pauci. Verbo dicam, articularis hicce morbus (quod vix de quovis alio adfirmaveris) divites plures interemit quam pauperes, plures sapientes quam fatuos.”

The treatment of a gouty patient naturally divides itself into that which is proper during the paroxysm, and that which is proper during the intervals between the paroxysms.

It was maintained by the great physician whose words I have just been quoting, that all artificial evacuations during a fit of the gout are useless or hurtful. He therefore discountenanced blood-letting, purging, and the use of diaphoretic medicines. It was nature's prerogative, he said, to exterminate the peccant matter in her own way; namely, by depositing it in the joints, whence it might be dispersed by insensible transpiration. Evacuant remedies had no other effect than that of recalling into the blood this peccant matter, which nature had already thrust forth to the extremities of the body; whereby it happened that the virus, which should have been eliminated through the joints, fell upon some of the viscera; and so the patient, who was in no danger before, became in peril of his life. I mention all this to show you how entirely identical was Sydenham's theory of the gout with that which is now rapidly regaining its lost ground in this country, and which I firmly believe to be the true

one. After his time, and upon his authority, the treatment of gout lapsed into an inert expectancy. Even Cullen came to the conclusion that the best thing to be done is to commit the sick man to "patience and flannel alone." Here and there, indeed, an advocate of more active measures sprung up. Dr. Rush thought that venesection was always safe, and generally serviceable: and some persons, following the bad example of the illustrious Harvey, were for extinguishing the inflammation by immersing the affected joint in cold water. Heberden, however, had clearer and juster views upon the subject. He perceived that one reason why physicians did nothing to check the paroxysm was, that they did not know what would check it. He agreed with Cullen in thinking "that no medicine for curing the gout had yet been found;" but he did not partake of his belief in "the impossibility of a cure by medicines."

"The itch (he observes) is supposed to be wholesome in some countries, where it is endemical; and an ague has been considered as a minister of health, whose presence and stay ought by all means to be courted. These opinions are now pretty generally exploded in England; and I hope the time will come when a specific for the gout as certain as those which have been discovered for these two disorders, will ascertain the equal safety and advantage of immediately stopping its career, and preventing its return."

That time has come: for the colchicum, judiciously employed, may fairly be accounted a specific for the gouty paroxysm. And it is remarkable how long this truth has been seen, though not distinctly or steadily. The hermodactyl of the ancients is the modern colchicum, and was in high estimation among them for its efficacy in the same forms of disease as are benefitted by the colchicum now. It bore, with some, the name of *anima articularum*, the soul of the joints, because (as Quincey states) it prevented "the lodgment of such gritty matter as occasions the gout and arthritic complaints." And I think there can be no doubt that the active principle of the quack medicine so much in vogue for the cure of gout some years ago—I mean the *eau medicinale*—was either the same with that of the meadow saffron, or derived from the same family of plants which Decandolle has associated together under the title "colchiaceæ."

This drug has certainly the property of easing, in an almost magical manner, the pain of gout. How it operates is not so clear. It is apt to produce nausea, faintness, and diarrhoea; but its curative influence is not conditional upon the occurrence of these symptoms. Sometimes the rapid disappearance of the gouty inflammation is its only perceptible effect. The patient may be in helpless

agony, with a tumefied red joint, to-day: and walking about, quite well, to-morrow. The colchicum is therefore plainly an anodyne. It also sensibly modifies the condition of the urine, rendering it less acid, and even alkaline, and increasing its quantity. These effects are consequent, I presume, upon changes in the blood wrought by this substance, which thus, and there, proves somehow an antidote to the poison of gout.

There are, as you are aware, various preparations of colchicum in use: the wine of the bulb; the wine of the seeds; the vinegar of colchicum; the acetous extract, made by evaporating that vinegar; the inspissated juice of the plant itself. These are all of them active and valuable medicines; and I should pretend to more knowledge than I possess, if I undertook to tell you which of them is the best.

The mode of administering the remedy, in a regular fit of the gout, is simple enough. For example, you may give forty or sixty minims of the *vinum colchici*, in a saline draught, at bed time; and half a drachm more, in a warm black dose, the next morning: and you may repeat this sequence if the gout continues. Some persons give twenty minims every six hours, with a drachm of Epsom salts, and a drachm of syrup of poppies in the draught, till the symptoms yield; but I prefer the other plan. In this way the pain is usually calmed, and the swelling reduced in a few days; or even, as if by a charm, in a few hours.

But you must not be satisfied with thus quelling the pain and inflammation. A strong prejudice at one time existed, and still exists among some practitioners, against the colchicum. It was said that it had indeed the power of cutting short the paroxysms, but that it cut short the patient's life also: that they who trusted to it for getting rid of the gout, very seldom lived more than two or three years afterwards. How far this was true I cannot tell: but even admitting it to be true, it was not, I conceive, so much the fault of the medicine as of the patient, or of the medical man who did not properly admonish the patient. Men were very glad to get rid of their gout on such easy terms; and they will sometimes say to us now: "I have, as you see, got the gout. This is Monday. I must be in the House of Commons, or attend such and such a meeting, or be at the head of my regiment, on Wednesday: and I expect that you will enable me to do so." Or even sometimes the reason may be that they are engaged to some good dinner two or three days afterwards. Now if patients are content, or are suffered to be content, with expelling the gout from their toe, without observing abstinence more than a day or two, and without any depletion or further medication at the



time, we can easily perceive the probability of their being soon attacked by some formidable internal complaint. I apprehend that the proper way to eradicate the lurking residue of the mischief is to continue to give small doses of the colchicum; five minims of the wine, for instance, two or three times a day, for a while. Moreover, purgatives must be employed, if that remedy does not prove aperient. Not violent purgatives, however, which, by weakening the patient, seem to strengthen the power of the gouty virus. With mild cathartics, moderate doses of mercury will generally be advisable to correct the subsisting disorder of the hepatic functions; and the patient must adopt and pursue abstinent, or at any rate strictly temperate habits, in respect to meat and wine.

And as I think that the dregs, if I may so speak; left behind it by a gouty paroxysm, may be dispersed by the continued use of what, in the usual acceptation of that word, I may call *alterative* doses of colchicum (doses, that is, which produce the desired purpose gradually, and by insensible operation) so I think it probable that many a fit of the gout might be averted, if the remedy were given in the same way upon the first occurrence of the ordinary premonitory troubles. Many of those troubles never appear to reach the crisis of a fit. There are headaches, attacks of asthma, derangements of the digestive organs, which, occurring in a gouty person, are presumed to be fainter intimations of the presence of the gouty poison in the blood; and if such symptoms yield (as unquestionably they often do) to colchicum, the presumption draws near to proof. Dr. Holland has well remarked that the meadow saffron, by its curative effects, may bring sundry maladies, hitherto thought anomalous, under the same law of morbid *gouty* action; just as the Peruvian bark has reduced many complaints, that were previously vague in their nature, within the same category of *agueish* distempers. The same author conjectures that as hypochondriasis is certainly often symptomatic of the gouty poison in the male, so may sometimes the kindred disease, hysteria, be in the female.

Strange stories are recorded—strange, but I believe true—of instantaneous cures of the gout by strong mental emotion, by sudden terror, by violent wrath. Dr. Rush relates an instance of this. An old man who for several years had suffered an annual attack of gout, was lying in one of these paroxysms, when his son, by some accident, drove the shaft of a waggon through the window of his room, with vast noise, and a great smashing and destruction of the glass. The old man leaped out of bed, forgetting his crutches; and his wife, on entering the apartment, was surprised to see him walking up and down,

and exclaiming angrily against the author of the mischief. The late Professor Gregory, of Edinburgh, was in the habit of mentioning another example to the same effect, authenticated to him by a naval surgeon. It occurred in the person of an officer who was freed from an attack of gout, when at sea, by an alarm of fire. Whether this influence of certain states of the mind be rightly alleged or not, it is clear that we can never hope to make any practical use of such a remedy. Indeed, a fit of the gout has been sometimes *brought on* by a mental shock.

The treatment of a gouty patient in the intervals between his attacks of gout, whether regular or irregular, must be chiefly regimenal. The instances are not few of men of good sense, and masters of themselves, who, being warned by one visitation of the gout, have thenceforward resolutely abstained from rich living, and from wine and strong drinks of all kinds, and who have been rewarded for their prudence and self-denial by complete immunity from any return of the disease; or upon whom, at any rate, its future assaults have been few and feeble. On the other hand, many who are liable to gout are taught by sharp experience that a single debauch, a casual glass or two of champagne, even an unusual indulgence in the use of animal food, may suffice to bring their enemy suddenly upon them. I am sure it is worth any *young* man's while, who has had the gout, to become a teetotaler. But the case is different with the *old*, and with those whose health has been broken by the inveterate disease. They must be allowed a certain quantity of their accustomed good cheer, or they become an easier prey to the disease. In such cases you must trim, as well as you can, between opposite dangers; between the Scylla of excess, and the Charybdis of debility.

It is the same with respect to exercise. The young and the hearty can scarcely take too much: the old and the dilapidated may, by one act of over exertion, incur the penalty of an attack. Although I can do little more than point out general principles for your guidance, I may remark, in reference to exercise, that it should never be *violent*, lest it excite a paroxysm by straining any part, or by causing great fatigue: that it should be *habitual*, daily, not used by fits and starts, and interrupted by long periods of indolence or inaction: and that it should be *active* muscular exercise, as distinguished from passive exercise or gestation. No mode of exercise is so good as that of walking; and with this may be agreeably and beneficially conjoined riding on horseback.

Early and regular hours are also of much importance; and the avoidance of severe mental application. Sydenham relates that one of the most atrocious attacks of gout he

ever underwent was induced by intense thought and study, in the composition of his medical works.

The regimen which I have been recommending may require some power of self-control; yet in reality it implies no severity of mortification. It is perfectly compatible with life's best enjoyments: but to be effectual it must be adopted early, as soon as the disease threatens, and steadily persevered in. Gouty persons, however, do not like these restraints. They are ready to believe that an attack of gout will do them good; or if they are disabused of that error, they are desirous that some medicine may be found which will avert the disease, without their being obliged to forego their accustomed indulgences. "To gratify this desire (says Cullen) physicians have proposed, and to take advantage of it empirics have feigned, many remedies." One of these was the famous Portland powder, of which Heberden remarks: "*Unum est ex multis quæ vocantur remediis specificis, quorum ortum, et splendorem, et occasum vidi.*" It consisted chiefly of bitters and aromatics, and had descended, with some slight variations in its composition, from the times of Galen. Another preventive has recently been praised by Dr. Graves, of Dublin, as being highly serviceable, although (what is a suspicious circumstance) it had, like the Portland powder, fallen out of fashion. These are its ingredients:—Two ounces of orange peel, an ounce of powdered rhubarb, and two ounces of the *pulvis aloës cum canellâ* of the Dublin Pharmacopœia, steeped for a week in a quart of brandy. A table-spoonful of the strained infusion is to be taken, mixed with two or three spoonfuls of water, night and morning. Sir Henry Hallford recommends what I think a better form of prophylactic remedy; viz. a few grains of rhubarb, with double the quantity of magnesia, every day: or some light bitter infusion, with tincture of rhubarb, and about fifteen grains of the bicarbonate of potass.

Now what has been observed respecting preventive remedies of this kind is, not so much that they are inefficacious, as that, *when exclusively trusted to*, they are unsafe. I believe that they are often useful, by improving the digestive process; but they are dangerous substitutes for a course of temperance and exercise.

When gout attacks the stomach, either by retrocession or primarily, it often proves rapidly fatal. The gastric affection is not, in general, inflammatory; so we judge, at least, from the *juvantia*. The attack, which consists of violent pain, and a sense of weight or of constriction, in the epigastrium, with sickness, vomiting, and a disposition to faint, is often relieved by the employment of stimulants. But such remedies would be likely to

aggravate inflammation. It will always be well, when symptoms like these occur, to enquire whether any indigestible food has been lately taken; for *gout* (so called) in the stomach has sometimes turned out, under the test of an emetic, to have been nothing more than *port* in the stomach. In the true gouty seizure, antacids will frequently remove the pain; magnesia, in full doses, with rhubarb. If this does not succeed, opium may be resorted to; and if it should be vomited, opiate enemata may be injected. Dr. Heberden thought that opium, and hot spices, were more efficacious and less inconvenient, in these cases, than wine and spirits; but when they fail, a glass of brandy will often allay the pain completely. The mustard poultice, or the turpentine stupe, applied over the epigastrium, has been followed by strikingly good effects. And it is in these emergencies, contingent upon retrocedent or misplaced gout, that we are justified in the endeavour to induce gout in the extremities: not however by internal stimuli, but by enveloping the feet in a mustard poultice, and so enticing or provoking the foe to quit his hold of the interior, and to appear in the outposts. And this expedient should be practised whatever may be the internal organ upon which the gouty disorder has settled.

Sometimes, but much less commonly, actual gastritis does seem to ensue; and therefore all these cases are anxious and alarming cases. I do not know how the inflammatory affection can be discriminated from the non-inflammatory, unless it be by the occurrence of *tenderness* with the pain, and of fever. You must treat such cases as you would treat an ordinary case of gastritis, taking no farther heed of the gout, except by the application of stimulating cataplasms to the feet.

This concludes what I proposed to say respecting gout and rheumatism: diseases of which the local seat is not exactly external, nor yet do they belong strictly to the interior of the body, except in their accidental complications. They form a link of connexion between the internal and external disorders which fall to the care of the physician; and I proceed, in the next and last place, to speak of those complaints which either affect the integuments alone; or which, at any rate, are attended with some notable affection of the skin.

Under the general head of *cutaneous diseases*, are included maladies of very different kinds, and of very different degrees of importance. Some are attended with fever, and run a definite course, and are often dangerous to life. Others are chronic, irregular in their progress, troublesome perhaps, and obstinate, and disfiguring, yet implying no peril to the existence of the patient.

Some again are contagious, while many are not so. But before I enter upon any farther account of these diseases, I wish to make you acquainted with the names by which the various morbid appearances presented by the skin have been known, since the time of Dr. Willan.

That author—whose works have been augmented by Dr. Bateman, so that perhaps I ought to say *those* authors—divides cutaneous diseases into eight orders, distinguished from each other solely by the appearances upon the skin. I shall omit the last of these orders, the order of *maculae*, such as freckles and congenital spots and discolorations, because in fact these are not diseases at all.

The first, then, of the appearances described by Dr. Willan are *papulae*; pimples. These are little elevations of the cuticle, of a red colour, and solid; not containing, I mean, any fluid. They are of uncertain duration, and often terminate in scurf. They are supposed to denote inflammation of the papillae of the skin. If you wish for an example of a papular eruption, look at that of small-pox, at its very earliest outbreak.

The second are *squamae*; scales. These are small, hard, thickened, opaque, whitish patches of unhealthy cuticle. The subjacent surface is red. They are well seen in lepra and psoriasis; and are very common in syphilitic eruptions.

The third are *exanthemata*; rashes. They consist of superficial red patches on the skin, variously figured, and irregularly diffused, and of all sizes. We have examples of them in some of the most important febrile cutaneous diseases; scarlet fever, measles, and others.

It is a pity that some other technical denomination was not chosen to express these rashes; for the term *exanthemata* has long been familiar in the profession as the title of an order of diseases in Cullen's Nosology.

The fourth are *bullae*; blebs, miniature blisters. Large portions of cuticle are detached from the subjacent skin, by the interposition of a thin transparent liquid; with inflammation beneath them. Such occur in erysipelas sometimes, and in pemphigus.

The fifth are *pustulae*; pustules. Circumscribed elevations of the cuticle, containing pus, and having red inflamed bases. We have instances of these in common boils; and in the eruption of small-pox when at its height and maturity.

The sixth are *vesiculae*; vesicles. Small elevations of the cuticle, covering a fluid which is generally clear and colourless at first, but becomes afterwards whitish and opaque, or pearly. These are exemplified in the eruption of cow-pox, and in the

chicken-pox. You will observe that these *vesiculae* differ very little, except in size, from the *bullae* or blebs. They often terminate in small scabs.

The seventh are *tubercula*; tubercles. This also is an unlucky appellation, since the word tubercle is almost appropriated, in the present day, to the scrofulous deposits which infest the lungs, and other parts of the body, in pulmonary phthisis. However, these cutaneous tubercles are small, hard, superficial tumors, circumscribed and permanent; or if they suppurate at all, the suppuration in them is partial. Sometimes they slowly ulcerate at the summit. The imperfectly suppurating pustules of the modified small-pox, and certain red spots which are apt to haunt the face, particularly of young persons, furnish examples.

Now it is very convenient, for the purpose of distinguishing different diseases, and of describing them, to know these outward marks when you see them, and to use these names. But they form a very unfit basis for the *classification* of diseases. *Maladies* may usefully be classed according to their causes; according to their intimate nature; according to the general plan of treatment they may require. But the superficial markings of disease have no definite relation to any of these heads. Besides, a complaint which is papular to-day may be vesicular to-morrow, and pustular next Saturday. Yet the classification most commonly followed in this country, and in France, is that of Willan and Bateman. Here we find collected under one and the same division *maladies* which nature has stamped with broad and obvious marks of distinction; the febrile with the non-febrile; contagious complaints with those which have not that property; ailments that are local and trivial, with diseases of grave import, and deeply rooted in the system at large. And, on the other hand, diseases which nature has plainly brought together, and connected by striking analogies and resemblances, this methodical arrangement puts widely asunder. I point out, without professing to remedy, these imperfections. I cannot even undertake to give you any full or systematic account of the many disorders comprised in this classification. There is, however, one group, so remarkable, so important, and so highly interesting, that I shall consider it as much in detail as I can. I allude to the group which Cullen comprehends under the title *exanthemata*. With this exception, the advancing year warns me that I must contract what I have to say respecting diseases of the skin within very narrow limits.

## LECTURES

ON THE

DISORDERS RESULTING FROM  
DEFECTIVE NUTRIMENT.

BY G. BUDD, M.D. F.R.S.

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**THERE** is no subject of more interest to the physiologist, of more practical importance to the physician, or that more urgently demands the grave consideration of the statesman, than the disorders resulting from defective nutriment. Yet, with all its interest, and with its vast social importance, it is a subject which, until lately, has engaged but little steady attention. Large numbers of men at sea, and in our prisons and asylums, have, at various times, been kept on a diet insufficient in quantity and variety for the support of the body—diseases of strange kind have appeared among them—the cause has been recognized, and the remedy applied, in the individual case, but the lesson has been forgotten—mankind in general have been no gainers—and at a short interval of time, and in a different place, a knowledge of the imperious necessity of nutriment more abundant or more varied is again dearly bought by the experience of wholesale sickness and death.

Of late, the attention of some of our most eminent physiologists has been directed towards this subject, and their experiments have led to many striking and unexpected results: but those experiments have been performed on the lower animals, and we are still but imperfectly acquainted with the various disorders that result from deficient nutriment in man. These disorders are, no doubt, frequently presented to us by the destitute poor in our large towns; but from their occurring in a scattered manner, and from our not being acquainted with all the circumstances in which they arise, their real cause escapes us. It is only—as in ships, garrisons, prisons, and asylums—when large numbers of men, with the daily routine of whose life we are acquainted, become affected with one disease, that our attention is fixed upon it, and that we can succeed in discovering its cause by considering what is peculiar in the circumstances in which the sufferers have been placed.

There are three different forms of disease, which are already traced to defective nutriment. The first and best known of these is scurvy, properly so called; of the second, the most distinctive character is a peculiar ulceration of the cornea; the third is chiefly marked by softness, or imperfect develop-

ment of the bones. There is perhaps a fourth, whose most striking symptom is diarrhoea. These diseases are not only different in appearance, but they arise from different causes—the defect or error of diet, on which they depend, is different for each—and any one of them may occur quite independently of the rest.

The chief indications of scurvy are, a pallid and somewhat dusky complexion; spongy and livid gums; and a remarkable proneness to hemorrhage, which shows itself in bleedings from the nose and gums, in discharges of blood from the stomach and bowels, and in petechiæ and large ecchymoses on the skin.

The lividity and swelling of the gums, which form perhaps the most striking character of scurvy, appear first at their free edges, but gradually extend until, in some cases, the gums are converted into a black, spongy mass, bleeding at the slightest touch, and completely concealing the teeth. This remarkable change of texture is strictly limited to the gums. The tongue is clean, and moist, and pale; and the inside of the lips and cheeks, smooth and pallid, as in chlorosis, and in striking contrast to the livid and spongy gums. When the gums are much affected the teeth become loosened in their sockets, and they not unfrequently drop out without having suffered decay.

The ecchymoses on the skin appear first, and are always in greatest number, on the legs; from the influence, no doubt, of gravitation. In advanced stages of the disease they are often seen on the arms and trunk; but very rarely on the face or head. They occur in small, circular, petechial spots, and in large irregular spots, of a variegated violet and green tint, which resemble in every respect the marks of a severe bruise.

In addition to these symptoms, we not unfrequently find the calf, or ham, hard and brawny, and the knee contracted, from an effusion of blood between layers of muscles, or in the deep-seated cellular tissue.

The effects of scurvy, as of other diseases which depend on an altered state of the blood, are usually first seen in parts that have been previously injured. The bruise-like marks on the legs often surround an old scar, or appear on a part that a long time previously had been the seat of some injury. In some cases, in advanced stages of scurvy, wounds long healed break out afresh; and fragments of bone consolidated after fracture become again disunited. But, notwithstanding this, there is very little disposition to ulceration in parts that have not previously been ulcerated. I have never met with ulcers of the cornea in a scorbutic patient; and although I have often had to treat sailors who had been confined to their hammocks six or eight weeks in a high



degree of scurvy, and during that time had been scarce able to change their posture, from the pain occasioned by any attempt to move the legs, I have never met with a single instance of bed-sores.

The natural secretions, in scurvy, are usually scanty. The skin is dry and rough; the urine in most cases, at least in sailors, is high coloured and scanty; and the bowels are generally confined. The patient may, indeed, have an occasional liquid and fetid stool, consisting chiefly of altered blood; but in simple scurvy the bowels are habitually costive. I have frequently met with instances of sailors in the most advanced stages of scurvy, when, from the state of their gums, they could eat but little of their hard provisions, passing seven or eight days without any evacuation from the bowels. In this respect, and in the absence of any especial tendency to ulceration, scurvy offers a striking contrast to other forms of disease induced by insufficient nutriment.

The outward signs of scurvy—the spongy and livid gums, the petechiæ or bruise-marks on the legs, the pallid and dusky complexion—are, from the first, attended by lowness of spirits, and, as might have been expected, by great muscular debility. There is, too, a great tendency to syncope, which, in advanced stages of the disease, is brought on by change of posture or any trifling exertion, and which not unfrequently proves fatal. But there are no striking nervous symptoms: the intellect is unaffected, and the senses are clear, to the last.

What would scarcely have been expected, the highest degree of scurvy may exist without much emaciation. I have, indeed, met with an instance of scurvy proving fatal without any perceptible loss of flesh. In this respect the disease may be compared to chlorosis, in which there may be very little wasting, when, from the impoverished state of her blood, the patient is reduced to extreme weakness. Sailors, when brought into hospital far advanced in scurvy, are generally, however, much emaciated; in consequence, perhaps, of their having had nothing to eat for weeks but hard salt-beef and ship-biscuit, which they are unable to masticate from the state of their gums.

Another circumstance that cannot fail to have struck every one who has seen much of scurvy, as it occurs at sea, is the remarkable uniformity of its character. The same symptoms, or nearly the same symptoms, are present in all. From this we may infer, when we find scorbutic persons affected with diarrhoea and other symptoms not usually associated with scurvy, that some cause has been in operation besides that by which scurvy is usually produced.

If, now, we inquire into the circumstances under which scurvy arises, with the view

of ascertaining its cause, we find that the only condition which is never wanting, and which seems absolutely essential to its production, is complete and prolonged abstinence from succulent vegetables or fruits, or their preserved juices, as articles of food.

The disease, which, until the performance of long voyages was almost unknown in the South of Europe, where vegetables and fruits abound, was, on the contrary, endemic, and the cause of great suffering, in all the northern countries, in the earliest times of which we have any medical record. In the sixteenth century, the Swedish and Danish physicians published very accurate accounts of its symptoms, and recommended, as preventives and remedies, various succulent vegetables—especially scurvy-grass, brook-lime, and water-cresses—which are found native, and in great abundance, during the summer months, in high northern latitudes.

All those writers agree, that the latter part of winter and the early part of spring was the season in which scurvy prevailed most, and that it uniformly disappeared during summer and autumn; but that, although endemic during the spring of every year, it was after winters unusually severe, or when the country had been laid waste by war, and during long sieges, that its ravages were most severely felt.

As agriculture and gardening improved, scurvy gradually became less frequent, and now that by the influence of these arts succulent vegetables are grown in such plenty as to form an important part of the food, even of the lowest of the people, in the most inclement season of the year—and that by the activity of modern commerce, and the rapidity of modern intercourse, the fruits of tropical climates supply the table during the dreary winters of the north,—the disease hardly ever occurs on land, except during sieges, or in persons long shut up in prisons and asylums. It would, indeed, have long ceased to attract attention if our improvements in navigation had not led to the performance of long voyages. By this scurvy was perpetuated as a formidable disease, destroying great numbers of men, impeding our commerce, and causing great loss, and occasionally national alarm and danger by almost disabling our fleets, long after it had ceased to occur on land, except after protracted winters, or during sieges, or among the then neglected inmates of our prisons and asylums.

The circumstance of its rarely occurring except at sea, has led many modern writers into the error of considering it peculiar to sea-faring people, or, at least, to regard what they have termed *sea-scurvy* as different from scurvy arising on land; but reference to the writers of the 16th and 17th centuries,



the accounts of the siege of Alexandria in the late war, published by Baron Larrey, and the reports of the Inspectors of Prisons, show that the disease may be equally destructive on shore, and that it presents there precisely the same characters as at sea.

The ravages occasioned by scurvy at sea during the voyages of the early navigators almost surpass belief; and must increase our admiration of the perseverance and courage that, unsubdued by such difficulties, still pushed on, with instruments we should now consider imperfect, over the unexplored expanse of ocean.

Vasco de Gama, in the voyage in 1497, which had such a remarkable influence on the destinies of this country, and of Europe, by the discovery of a passage to the East Indies round the Cape of Good Hope, lost a hundred of his men, out of a hundred and sixty, from this distemper.

In the expedition for the establishment of the East India Company, consisting of four ships under Commodore Lancaster, which left this country on the 2d of April, 1600, scurvy prevailed to such a degree in three of the ships, that one-fourth of the crews died of it before reaching the Cape, and the rest were so weakened that hands were wanting to work the ships, and the merchants on board were obliged to do the duties of common sailors. A remarkable circumstance was here noticed, which, if laid hold of and turned to profit, would have prevented many subsequent disasters. It was, that while three of the ships were so weakened by scurvy that their crews could not take in their sails or hoist out their boats, the Commodore's own ship was in perfect health. This was attributed at the time to his having given three table-spoonfuls of lemon-juice every morning to each of his men. The discovery of the virtues of lemon-juice, as a preventive of scurvy at sea, seemed to have been made; but it was soon forgotten, or, at least, it was only remembered when chance again offered some striking proof of the singular efficacy of oranges or lemons. No practical advantage followed; the disease continued, as before, to devastate our fleets, destroying more men, even in time of war, than fell in battle, until 1795, when attention having been again called to the protective influence of lemon-juice, and some experiments having been made which left no doubt of its reality, an Admiralty order was given that every ship in His Majesty's navy should have a regular supply of it. The effect of this order was remarkable. Notwithstanding the improvements that had been made some years previously in the victualling and general management of our ships, and which had done much to improve the health of sailors, the mortality fell suddenly, and to a degree that can scarcely be

credited by one who has not read the heart-rending accounts of the sufferings occasioned by scurvy in the voyages of Lord Anson, and our earlier navigators. Some estimate may, however, be formed of the effects of this and of the other salutary measures, by a fact mentioned by Sir J. Barrow, that between the years 1779 and 1813 the ordinary sickness and mortality in the British navy were reduced almost to one-fourth of their former proportion.

At present, scurvy is almost unknown in the British navy; and our ships of war, while on the ocean, often have a less mortality than the most healthful districts of the globe. This is what might have been expected from the pure air at sea, and the freedom from noxious malaria and contagious diseases that occasion so large a share of the mortality on shore, and from the absence of the cares and anxieties that exercise their corroding power on those whom necessity compels to earn a precarious subsistence in the crowded workshops of our manufacturing towns.

Now that the experience of nearly half a century has established the infallible efficacy of lemon-juice in preventing scurvy even in the longest voyages, and in curing it in whatever circumstances it occurs, and when lemon-juice is so cheap that a sailor may be furnished during a voyage from this country to Calcutta with the liberal allowance of the navy for four or five shillings, it may well excite surprise that up to the present time no regulation has been made for compelling our merchant-ships to take a supply of it. Our merchant-seamen, of whose great importance every statesman is aware, who enrich the country in peace and defend it in war, are still left to the avarice of ship-owners, who not unfrequently sacrifice the health of the crews, and often, by a just retribution, their own interest, for a petty saving of what, at sea, must be considered one of the necessities of life. Every year a number of miserable beings are brought into port in our merchant-ships, with pallid sallow countenances, with their bodies mottled with petechiæ and bruise-marks — their gums bleeding and spongy — their teeth dropping out — as if to show us the fidelity of the descriptions which the old navigators have left of their sufferings, to bring the past in contact with the present, and to teach us a lesson of humility by showing, with all our boasted improvements, how slow we still are, when not urged on by the impulse of self-interest, in giving effect to discoveries most important to the well-being of our fellow men. Now and then still worse cases occur. A vessel in a voyage from Sidney, or from the Mauritius, loses half her crew of scurvy; the rest, with the exception of the officers, who, from having a more varied

diet, escape, are brought into hospital in the condition I have described; but no notice is taken of the fact. The owners get a fresh crew, and the vessel again puts to sea—we may hope, for the sake of humanity, better provisioned than before. Occasionally, one or two of the debilitated wretches die suddenly of faintness, brought on by the exertion of being moved from their vessel to the hospital, or to lodgings on shore. A coroner's inquest is held, and the want of all antiscorbutics proved; but the complaint is ascribed to contagion, to the close state of the fore-castle, to salt provisions—to any cause but the right—and the inquiry ends by a rebuke from the coroner. No indignation is excited that valuable lives should be so shamefully sacrificed, and that so much suffering should be endured, which, as the experience of half a century has proved beyond dispute, the expense of a few shillings would have prevented.

But astonishing and humiliating as all this is, it is yet more astonishing that scurvy should still prevail in our prisons, where it might be prevented with certainty by any of the cheapest and most abundant of our succulent vegetables; which experience has shewn to be just as efficacious as lemon-juice. Such, however, is the fact. The reports of the Inspectors of Prisons, published by authority of parliament, since the year 1836, abound with instances of the occurrence of scurvy in our jails and prisons. In the first report it is stated that, in 1836, it assumed a very malignant form in the county gaol at Norwich; no fewer than eighteen persons being severely affected with it. It is also stated in the same report that, in the House of Correction at Swaffham, the prisoners frequently lose their teeth by the effect of scurvy; and when they were examined in the presence of the Inspector, sixteen were found presenting its early symptoms. The late reports show that it has not become much less frequent since.

I can only explain the numerous instances of scurvy in gaols in different parts of the kingdom, by the fact, that mistaken notions as to its cause are still very generally entertained by medical men.

The continued prevalence of the disease at sea, long after it had ceased to excite much attention on shore, led to the notion, which is not yet fully exploded, that it is occasioned by the excessive use of salt.

The occurrence of scurvy in our prisons, where salt meat, if given at all, forms a very inconsiderable share of the diet, is, perhaps, a sufficient refutation of it. But if further evidence be necessary, it is found in abundance in isolated cases scattered through our medical journals and Transactions, and in the accounts left us by the physicians of the 16th

and 17th centuries, of the ravages of scurvy on land. In 1720, during the war between the Austrians and Turks, when the imperial army wintered in Hungary, many thousands of the common soldiers were cut off by scurvy. Dr. Kramer, who was physician to the army, tells us that the soldiers ate no salt beef or pork; but, on the contrary, had plenty of fresh provisions, at a very low price. The disease, he says, broke out at the end of winter, and, notwithstanding the prescriptions of the College of Physicians at Vienna, to whom he had applied for advice, it persisted until, on the approach of summer, the earth became covered with vegetables and fruits. In the early part of last century scurvy was also very common and very fatal in the Russian armies, although the soldiers had no salt provisions.

No longer ago than 1836 it prevailed to a great extent among our troops stationed in the new province of Queen Adelaide at the Cape of Good Hope. It appears from the report of Dr. Murray, the principal medical officer at the Cape, that the men had no harassing duties, and were abundantly supplied with good fresh meat, without having had an ounce of salt provisions; but they had been a long time without fruit or fresh vegetables. It is interesting to remark that the disease appeared first about the end of July, and continued to prevail from that time to December; a season corresponding to spring in the northern hemisphere. In this circumstance, and in the fact mentioned by Dr. Murray, that none of the officers were affected, we find perfect agreement with many of the accounts left us of the occurrence of scurvy in the continental armies in the early part of last century.

These instances, and I might bring forward many others of the same kind, are sufficient to show that scurvy may occur in the highest degree in persons living entirely on fresh meat. There are other facts which show that salt has no share whatever in producing it. It was long ago remarked by Dr. Lind, who had the merit of first pointing out the error of the opinion in question, that few workmen, in any business, are so healthy as those engaged in the preparation of sea-salt; and that persons who work night and day in the salt-mines in Poland, and even live in them, are not at all subject to scurvy; but, on the contrary, are remarkable for their health. It was remarked, too, by Dr. Lind, Sir G. Blane, and other of our naval physicians, that the drinking of salt water has no tendency to bring on, or to aggravate, scurvy. But another circumstance decisive of the question, as I think, is, that scurvy is not only infallibly prevented, but is cured with the greatest readiness, by lemon-juice, *even while*

*the patients continue to subsist on salt provisions.*

All these circumstances—that scurvy may exist in the highest degree in persons living entirely on fresh meat; that it is not increased by the use of salt; that it may be prevented, for any length of time, in persons who subsist on salt provisions, and can be readily cured, even in those who continue the use of them—show clearly that salt has no share whatever in producing it. That the notion is still held, and that it still exerts its baneful influence in diverting attention from the real cause of scurvy, and, consequently, blinding men to the means by which it may be prevented—a century after a clear refutation of it had been given by Dr. Lind, who, from being at the head of the medical department of the navy, spoke with a voice of authority in such matters—furnishes us with a striking instance of the difficulty of eradicating popular errors, even when their evil consequences present themselves in obvious and tangible shape.

The performance of long voyages, which perpetuated scurvy, and led to the error that it is produced by the excessive use of salt, by a kind of compensation gave the means of refuting the ancient opinion which the prevalence of scurvy in northern countries only had sanctioned; namely, that cold has a great share in producing it. When men began to make long sea-voyages, they soon found, to their surprise and dismay, that scurvy is no respecter of climates; that it may prove as destructive under the burning sun of the tropics, as in the icy seas of the frigid zone. An attentive consideration of the circumstances under which scurvy occurred on land would have led to the conclusion that cold has little share in producing it. It invariably attained its greatest height, not in the depth of winter, when the cold is greatest, but in spring. In some celebrated sieges undertaken in spring, and carried on during the summer, scurvy prevailed to an almost unexampled extent. During the siege of Thorn, in Prussia, by the Swedes, in 1703, which was carried on during the heat of summer, and lasted only five months, 5000 of the garrison, besides great numbers of the inhabitants, died of scurvy. Its independence of climate was shown by the fact that the besiegers were, at the same time, quite free from it. Another instance of the same kind, the latest on record, happened in 1801, during the siege of Alexandria. The siege, which was commenced by the English in May, lasted only to the end of August, yet no less than 3500 scorbutic patients were received into the military hospitals, which the French had established in the city. Among the inhabitants the disease was equally prevalent.

Instances of this kind occasionally happened to stagger men's belief, but they weighed little against the fact constantly presented to their notice, that the disease prevailed exclusively in northern countries and that it was invariably most felt after winters of unusual severity, and the notion still held its ground that the direct influence of cold has great share in causing it.

Men had not yet perceived that the disease had its real origin, not in the cold of our rigorous climate, but in the abstinence from fresh vegetables and fruits, which, in the infancy of our agriculture and commerce, the cold of winter always occasioned.

Another circumstance that made men more slow to seize on the real cause of scurvy, is, that the disease only appears after the cause has long continued to act. Abstinence from succulent vegetables or fruits, or the preserved juices, which we may consider as their equivalent, produces no ill effects at first. It is only after this abstinence has been protracted from two to five months that the health suffers so grievously. This explains the fact that the disease, when occurring in ordinary circumstances on land, invariably appeared, not at the beginning or in the depth of winter, but towards the end of winter or in spring. It explains, also, another fact, not noticed by medical writers, but which clearly appears in the history of scurvy, that the fatal effects of scurvy were most felt during sieges commenced in spring, and in voyages entered on in spring from cold countries. The siege and the voyage prolonged, not the cold of winter, but the abstinence from succulent vegetables and fruits. Another exemplification of the same law is seen in the reports of the Inspectors of Prisons. It is frequently stated in the reports, that scurvy shows itself first, and always exists in the highest degree, in the prisoners longest confined. Scurvy has often prevailed in lunatic asylums, and to a greater degree than in other establishments, where the diet is in no respect better; and many persons have in consequence inferred that lunatics are especially prone to scurvy. The fact is fully accounted for by the very long time these unfortunate persons are kept in confinement. The defect of diet, which does not show itself in a few weeks, or perhaps, months, becomes manifest enough after the lapse of years.

Want of the insight which this idea gives us, compelled physicians to have recourse to a great variety of causes, in order to explain what appeared to them anomalies in the history of scurvy\*.

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\* We have been obliged to divide this lecture on account of its length.

RESEARCHES  
INTO THE  
NATURE OF CERTAIN FREQUENT  
FORMS OF DISEASE

CHARACTERIZED BY THE PRESENCE OF  
OXALATE OF LIME IN THE URINE.

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(*For the Medical Gazette.*)

THE extreme rarity of crystalline deposits of oxalate of lime in the urine has often attracted the notice of writers on calculous affections, and many have expressed their surprise that, although they have repeatedly examined the urine in cases where calculi of oxalate of lime exist, they have never succeeded in detecting a deposit of this substance. To the generally admitted accuracy of this statement all investigators have borne witness: thus in the elegant and elaborate work of Dr. Prout\*, which must be regarded as giving the most complete account of the present state of our knowledge on these matters, the deposit of oxalate of lime is scarcely described; and the article on the oxalic diathesis rather applies to the cases in which the oxalate of lime has existed in a truly calculous form, or to those in which the presence of oxalic acid is rather suspected than proved; the whole series of remarks inclining to the generally received notion of the almost necessary connection between the presence of saccharine matter and the development of oxalic acid. M. Rayer alludes only to the artificial production of crystals of oxalate of lime effected by administering to patients alkaline oxalates, and figures, among his very accurate delineations of urinary deposits, the precipitate produced by the addition of oxalate of ammonia to urine; and the only case of the occurrence of oxalate of lime in the urine that he cites† is one which occurred to myself several years ago, the details of which appeared in the *MEDICAL GAZETTE*‡ in a laborious paper on urinary deposits by Dr. Brett.

I was first led to question the accuracy of the generally received opinion of the extreme rarity of the presence of

oxalate of lime in a crystalline form, during my examination of urinary deposits preparatory to the publication of my paper in the last number of *Guy's Hospital Reports*: since then, I have, in the extensive field of experience in public practice at my command, carried on these researches on a large scale, and have examined microscopically the urine in many hundreds of cases of various diseases. The result of this investigation has been the discovery of the comparative frequency of oxalate of lime in the urine in fine and well-defined octahedral crystals, and of the connection between the occurrence of this substance and the existence of certain definite ailments, all characterized by great nervous irritability. I should have been anxious to have deferred publishing the discovery of this very curious fact until I had collected data sufficient to have enabled me to have drawn more satisfactory inductions than I can now venture to do; but feeling so strongly impressed with the importance of detecting the presence of the oxalate of lime where it exists, from its serving as well to elucidate the nature as to point out a more successful plan of treatment in many obscure and tedious cases, generally referred to dyspepsia, hypochondriasis, and other analogous ailments, I have ventured to offer the amount of experience I have accumulated on this matter to the profession in its present crude state. I therefore beg to reserve to myself the permission of correcting at a future period any statements in these papers which subsequent induction from a more extensive series of observations may, perchance, prove to be erroneous.

*Detection of oxalate of lime in urine.*

—To this point I have adverted in my paper in *Guy's Hospital Reports*\*, and I feel very anxious that this should be examined by others in different localities, for the purpose of ascertaining how far the formation of the oxalate of lime is connected with the depressing influences always more or less active in large and densely populated cities; for, in the cases of disease occurring in this metropolis, I have no hesitation in declaring, as the result of my own experience, that the *oxalate is of more frequent occurrence in urine* than the deposits of earthy phosphates.

\* *Stomach and Urinary Diseases*, 1840, p. 59.

† *Traité des Maladies des Reins*, 1839, p. 207.

‡ Vol. xvii., p. 864.

\* *Guy's Hospital Reports*, No. xiv., p. 211.



To examine urine for the purpose of detecting the existence of the salt under consideration, allow a portion passed a few hours after a meal to repose in a glass vessel; if this be done in winter, or during the prevalence of frequent and rapid alternations of temperature, a more or less dense deposit of urate of ammonia will generally make its appearance, arising either from the sudden cooling of the urine, or from interference with the functions of the skin prior to its excretion. In warm weather, however, or when the functions of the skin are tolerably perfect, the urine, albeit it may be loaded with oxalate of lime, may still appear limpid, or, at furthest, its lower layers only be rendered opaque by the deposition of a cloud of vesical mucus. Decant the upper 6-7ths of the urine, pour a portion of the remainder into a watch-glass, and gently warm it over a lamp, in a few seconds the heat will have rendered the fluid specifically lighter, and induced the deposition of the crystals of oxalate, if any were present: this may be hastened by gently moving the glass, so as to give the fluid a rotatory motion, which will collect the oxalate to the bottom of the capsule. The application of warmth serves, also, to remove the obscurity arising from the presence of urate of ammonia, which, as is well known, is readily dissolved by exposing urine containing it to a gentle heat. Having allowed the urine to repose for a minute or two, remove the greater portion of the fluid with a pipette, and replace it by distilled water. A white powder, often of a glittering appearance, will now become visible, and this, under a low magnifying power, as by placing the capsule under a microscope furnished with a half-inch object-glass, will be found to consist of splendid crystals of oxalate of lime in beautifully formed octohedra, with sharply defined edges and angles. It sometimes occurs that the oxalate is present in the form of exceedingly minute crystals: it then resembles a series of minute cubes often adhering together like blood-discs: these, however, are readily and rapidly resolved into octohedra under a higher magnifying power.

This process is by far the most satisfactory, and, although it requires a little tact, still, after a few trials, it can readily be performed in a very few minutes: still even this may be avoided

by placing a drop of the lowermost stratum of the urine on a plate of glass, placing over it a fragment of thin glass or mica, and then submitting it to the microscope: the crystals diffused through the fluid will then become very beautifully distinct. In this way, however, it is obvious that very much fewer are submitted to examination than by the former process.

It is a very remarkable and interesting circumstance, that this salt, although I have now examined a large number of specimens of urine containing it, has never subsided to form a distinct deposit; remaining for days diffused through the fluid even when present in so large a quantity that each drop of the urine, when placed under the microscope, was found loaded with the crystals. If, however, any substance, capable of constituting a nucleus, be present, the oxalate will be deposited around it, although scarcely in cohering masses, and always colourless and beautifully transparent. If, as occasionally occurs, a specimen of oxalic urine happened to contain an excess of triple phosphate, the crystals of this salt are found mixed with those of the oxalate. I have also found the octohedra beautifully crystallized on a hair accidentally present in the urine, like sugar-candy on a string. The reason why a large quantity of the oxalate, when present, escapes the eye, arises, I suspect, from its refractive power approaching that of urine; for whenever we meet with a specimen in which the salt has partially subsided, and replaced the decanted urine by distilled water, the crystals often become readily perceptible to the unaided eye, resembling so many glistening points in the fluid.

The crystals of the oxalate, when collected in the manner above directed in a watch-glass, are unaltered by boiling either in acetic acid or solution of potass. In nitric acid they readily dissolve without effervescence. The solution may be watched under the microscope very readily. When the oxalate is allowed to dry on a plate of glass, and then examined, each crystal presents the curious appearance I described in Guy's Hospital Reports, resembling two concentric cubes, with their angles and sides opposed, the inner one looking transparent, and the outer black, so that each resembles a translucent cube set in a black frame.



This is best seen under a half-inch object-glass: with a higher power this appearance is lost.

In a very few cases the oxalate is met with in very remarkable crystals, shaped like dumb-bells, or rather like two kidneys with their concavities opposed, and sometimes so closely approximating as to appear circular. These crystals are produced, in all probability, by a zeolitic arrangement of minute acicular crystals. I have as yet met with but three cases in which this variety was present. One of these was under my care for some months; and I had repeated opportunities of examining the urine. The remarkable crystals now referred to became in all mixed with, and ultimately replaced by, the ordinary octohedral variety.

The greatest possible variation in the size of these crystals is met with, not only in different specimens of urine, but often in the very same portion. I have often met with octohedra of oxalate mixed with others four or six times larger in a single drop of urine. The following measurements were made from some specimens, I have preserved between plates of glass, by means of the beautiful micrometer of Powell, belonging to the large microscope he has lately constructed for Guy's Hospital:—

Length of a side of the largest octohedra	Inch.
smaller ditto	$\frac{1}{16}$
smallest ditto	$\frac{1}{32}$
Long diameter of large "dumb-bell" crystals	$\frac{1}{16}$
Short diameter of ditto	$\frac{1}{16}$
Diameter of some nearly circular	$\frac{1}{16}$
Long diameter of the smallest "dumb-bells"	$\frac{1}{32}$
Short diameter of ditto	$\frac{1}{32}$

*State of urine containing the oxalate of lime.*—In the great majority of cases the urine was of a fine amber hue, often darker than in health, but never presenting an approach to the greenish hue described by Dr. Prout as characteristic of the secretions during the presence of what he has described as the oxalic diathesis. In a few cases the urine was paler than natural; and then was always of lower specific gravity. This, however, was, in most instances, but a transient alteration, depending upon accidental causes. In many instances a deposit of urate of ammonia, occasionally tinted pink by purpurine, fell during cooling. This I

observed to be infinitely more frequent during the months of January to March than in the three succeeding months of this year: hence it in all probability depended upon the influence of cold upon the cutaneous functions, thus causing a large amount of azote, under the form of the urate, to be excreted by the kidney. The specific gravity of oxalic urine varies extremely; in rather more than half the specimens being, however, between 1.015 and 1.025. In eighty-five different specimens of which I have preserved notes, the ratio of the densities was as follows:—

In 9 specimens the specific gravity ranged from	1.009 : 1.015
In 27 ditto ditto	1.016 : 1.020
In 23 ditto ditto	1.021 : 1.025
In 26 ditto ditto	1.025 : 1.030

The densities of the specimens of urine passed before going to bed at night, and immediately on rising in the morning, were frequently very different: thus, in twenty-six cases in which the night and morning urines were separately examined—

The night specimen was heaviest in	12
The morning specimen heaviest in	5
Both alike in	9

And, as a general rule, the heaviest specimens contained more of the oxalate. It seldom happened that the total quantity of urine passed in these cases very much exceeded the average proportion; in a very few only, positive diuresis could be said to exist. Frequently the patients have, from the occasional irritability of bladder present, mistaken the frequent desire to pass urine for an increased quantity; and by positive measurement of the quantity of urine passed in twenty-four hours, the absence of any very considerable increase was proved.

The acidity of these specimens was always well marked, often far more so than in health, and never being absent. I have not yet met with a single case in which an alkaline, or even positively neutral, state existed.

An increase in the quantity of urea, greater frequently than the density of the urine would have led us to suspect, was frequently present; indeed I have scarcely met with a specimen in which, when the density was above 1.015, distinct indications of an excess of urea were not met with; and in twenty-four of the eighty-five specimens above re-

ferred to, so large a quantity was present, that very rapid, and in some almost immediate, crystallization ensued on the addition of nitric acid. In general, in the cases where the greatest excess of urea was present, the largest and most abundant crystals of the oxalate were detected.

*Complication of the oxalate of lime with other deposits.*—In more than half the cases the oxalate of lime was found unmixed with any other saline deposit; in a very few, crystals of uric acid were found from the first, mixed with the octohedra of oxalate of lime; and in nearly all the successful cases this acid appeared in the course of the treatment, and ultimately replaced the oxalate altogether at a period generally contemporary with the convalescence of the patient. In three cases alone prisms and stellæ of the ammoniaco-magnesian phosphate were found mixed with the oxalate, and occasionally replacing it in the course of the treatment; in two of these the phosphate was observed in the urine some time before the appearance of the oxalate.

In several specimens a copious troubling was produced on the application of heat; this generally depending upon the precipitation of the earthy phosphates, as a drop of dilute acid immediately restored the limpidity of the fluid. In one specimen alone did this troubling depend on the presence of albumen; and then it was transient, appearing but once in the case, and then depending upon some secretions from an irritable vesical mucous membrane becoming mixed with the urine. I have as yet seen no instance of a complication of this oxalic affection with granular degeneration of the kidneys.

Out of the 85 cases before referred to, the oxalate was present unmixed in	43 cases
Mixed with urate ammonia in	15 "
————— uric acid	15 "
————— triple phosphate	4 "
Phosphate deposited by heat	8 "
	—
	85

In one of the specimens containing the triple phosphate, the application of heat produced a deposit of the earthy salts.

Many of the specimens of oxalic urine gave a precipitate with salts of lime, insoluble in acetic acid, and con-

sisting of oxalate of lime. This, in some instances at least, depended on the presence of oxalate of ammonia, and delicate acicular crystals of this salt occasionally formed upon the edge of the capsule by spontaneous evaporation. I have not satisfied myself that oxalic acid exists in a free state in the urine under consideration. In no instance have I yet found sugar present in oxalic urine; and although I commenced these investigations with a strong bias in favour of the almost necessary connection between the presence of saccharine matter and oxalic acid, yet, in proportion as I have extended my researches, this idea became less and less supported by experience. In fact, I have never as yet met with oxalate of lime in diabetic urine. I have been twice shown specimens in which a white creamy sediment was considered to be oxalate of lime; but this, by chemical examination, turned out to be a chylous deposit, containing much fatty matter, and yielding butyric acid, or something analogous to it, by distillation.

One very constant phenomenon was observed in the microscopic examination of oxalic urine, viz. the presence of a very large quantity of epithelial scales: it was, indeed, the exception to the general rule to meet with this form of urine free from such an admixture. So constantly was it found, that repeatedly a white deposit of epithelium has often attracted my attention, and led to the suspicion of the probable presence of oxalate of lime. In general the scales of epithelium are unaltered in form, being oval and marked with a circular spot in the centre; being, in fact, the variety described by authors under the name of *nucleated epithelium*. Sometimes irregular lacerated fragments of epithelial structure were met with; and frequently, if not too intense a light were used, a portion of the urine could be seen, under the microscope, to be full of them.

Although I have generally met with the oxalate of lime diffused through the urine, yet, if much mucus were present, so as to form a tolerably dense cloud, the salt might often be seen entangled in its meshes like glistening points; and whenever any other matter was present, which, by repose, became deposited, a great portion of the oxalate would almost invariably fall with it.

This was particularly the case when triple phosphate of magnesia and ammonia, or uric acid, existed under the form of a triple crystalline deposit; for on submitting a portion of this to the microscope, the octohedra of oxalate were always detected with the prisms or stellæ of the former, or with the cylinders or lozenges of the latter.

*Source of the oxalate of lime.*—This question is one of great interest, and becomes the more important since my having had occasion to discover the very frequent existence of this salt in the urine; so that, instead of being very rare, it really is considerably more frequent than the occurrence of the earthy phosphates. It is scarcely possible to avoid being impressed with the very probable physiological relation between oxalic acid and sugar: we know that the latter substance forms a considerable item in our list of aliments; we know that the great majority of farinaceous matters are partially converted into this element during the act of digestion; and it is indisputable that, under certain circumstances, it finds its way into the blood, and is eliminated by the kidneys; and lastly, we know that, under certain morbid influences, the great proportion of our food may, whilst in the stomach, be converted into sugar, which becoming absorbed, rapidly passes through the circulation, and is thrown out of the system of the kidneys as an effete matter, with the effect of producing more or less rapid emaciation, and in most cases leading to fatal marasmus. Then, recollecting the facility with which sugar and its chemical allies, as starch, gum, and wood fibre, are, under the influence of oxydizing agents, converted into oxalic acid, and having sufficient amount of evidence to prove that when oxalic acid is really found in the urine, symptoms bearing no distant relation to those of a diabetic character are met with, we are almost inevitably led to draw the induction that the oxalate of lime found in the secretion owes its origin to sugar, and to locate the *fons et origo malorum* in the digestive organs. This appears to be nearly the view adopted by that very excellent authority in these matters, Dr. Prout; and thus to a great extent are we led from his reasoning to explain the two classes of cases which he has included under his oxalic diathesis; the one including those

in which, from symptoms, he suspects the presence of oxalic acid, and the others including the cases in which all doubt was removed by the presence of calculous concretions.

Excluding the cases to which Dr. Prout\* has referred, and confining our consideration to those which I am now endeavouring to draw attention to, the following facts may be stated as fully borne out by the observations I have made:—

1. That in the urine under consideration oxalate of lime is present, diffused through the fluid, and in a crystalline form.

2. That in rather more than one-third of the cases, uric acid or urates existed in large excess, forming the greater bulk of the existing deposit.

3. That in all there exists a greater proportion of urea than in natural and healthy urine of the same density; and in nearly 30 per cent. of the cases, so large a quantity of urea was present, that the fluid crystallized into a nearly solid mass on the addition of nitric acid.

4. That the urate of ammonia found in the deposits of oxalic urine is occasionally tinted of a pink hue.

5. That an excess of phosphates frequently accompanies the oxalate.

6. That no evidence of free sugar has occurred in the specimens I have examined†.

Every one is now tolerably familiar with the compositions of the urine in diabetes, and it has been deter-

\* The value of the microscope, in the examination of urine, in addition to the great saving of time it effects, cannot be better illustrated than by a reference to the characters given by this distinguished physician, in his truly philosophical work, of what he regards as oxalic urine. "The properties of the urine here described, when well marked, are sufficiently definite to lead those who are conversant with the phenomena presented by the urine in glass vessels to suspect the presence of the oxalic acid diathesis; but they are not sufficiently definite to enable the most experienced eye to decide at once upon the point. . . . The judgment, therefore, must in all instances be formed from the general tenour of the phenomena, and from the concomitant symptoms to be presently detailed; and these taken together, for the most part leave little doubt on the subject; even though an oxalate of lime calculus may not have been known to have passed from the kidney."—pp. 59, 60. By following the directions I have given on this matter, any one, however inexperienced, may, by aid of a microscope, readily, and without any risk of fallacy, detect the oxalate where it really exists, without depending upon the doubtful evidence afforded by symptoms.

† Tiedemann and Gmelin, *Recherches sur la Digestion*. Paris, 1827. Pp. 202–205.

mined, from great observation, that, as a general rule, diabetic urine very seldom contains an excess of urea, uric acid, or urates, especially the pink variety; and that this secretion is remarkably free from saline deposits; the increased specific gravity depending upon the presence of large proportions of sugar. In the oxalic urine under consideration, the density *increases with the quantity of urea*, which is often present in very large excess: deposits of uric and urates are frequent; and, further, no analogy whatever with saccharine urine exists, save in density, which we have already learned depends upon a totally different cause. Thus, so far as the abstract examination of the urine is concerned, not the slightest countenance is given to the idea of their being any relation between oxalic and saccharine urine, however much our preconceived and hypothetical views may have led us to expect the existence of such relation. What, then, is the source of the oxalate of lime? and how can its production be explained consistently with the phenomena presented by the urine? From the cases detailed in this paper, we shall have no difficulty in proving to a demonstration the positive and constant existence of serious functional derangement of the digestive organs, especially of the stomach, duodenum, and liver; and, further, that the quantity of oxalic acid generated is, to a very considerable extent, under the control of diet: some articles of food at once causing the excretions of this substance in very large quantities, whilst others appear to have the effect of nearly totally checking it. These circumstances alone, together with the emaciation so generally present in the disease under consideration, at once prove, that whatever be the immediate agent which causes the kidneys to receive the oxalic acid from the blood, that the primary cause must, as Dr. Prout has well and satisfactorily shown, be referred to the digestive and assimilated functions. It must, then, be recollected that an excess of urea, and often of uric acid, in most instances accompanies the development of the oxalic urine. It is, therefore, highly probable that both these unnatural states of the secretion are produced by the same morbid influence; and, further, when the very remarkable chemical relation existing between urea, uric acid, and

oxalic acid, is borne in mind, as well as the readiness with which the former are converted into the latter, is it not a legitimate conclusion to suppose that the disease under consideration ought to be regarded as a form of azoturia (of which an excess of urea is the prevalent indication), in which the vital chemistry of the kidney has converted part of the urea into oxalic acid? This view appears to me to be supported by what I have observed of the history, symptoms, and progress of the cases, as contrasted with the changes presented by the urine during treatment.

The ready conversion of uric into oxalic acid\*, under the influence of oxidizing agents, has been satisfactorily shown by Professors Liebig and Wöhler; for when uric acid is heated with water and peroxide of lead, oxalic acid, carbonic acid, and allantoin, the peculiar ingredient of the allantoic fluid of the cow are generated. The relation between urea and oxalic acid is readily shown; for if we conceive urea to exist in the blood, and it to be the duty of the kidney to separate it, which seems to be the present generally adopted view, we have only to suppose the organ to exert a slight deoxidating or decomposing influence to insure the conversion of urea into oxalate of ammonia. We know that under a depressing influence exerted on the nervous system at large, or upon a portion of it connected with the functions of the kidney, as during typhus adynamic fever on the one hand, and blows over, or a fracture of, the spine, on the other, that such decomposing influence is unquestionable, and the urine becomes loaded with carbonate of ammonia from a re-arrangement of the component elements of the urea; thus one atom of urea and two of water are resolved into two atoms of carbonate of ammonia. If, then, a less energetic amount of this morbidly depressing influence be exerted, we shall have one atom of urea and two of water, lose an atom of oxygen to become converted

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\* The readiness with which, under certain circumstances, uric acid is converted into the oxalic, may be well illustrated by a fact which has been observed in connection with the guano of South America, a substance now acquiring great celebrity as a manure. This contains, when recent, a considerable proportion of citrate of ammonia, which salt, after a certain length of time, often during the voyage to this country, nearly wholly disappears, and is replaced by oxalate of ammonia.



into two atoms of oxalate of ammonia—a salt which I have shown above to exist in the urine. Further, the presence of this salt must immediately determine the formation of the oxalate of lime by a double decomposition between the oxalic and calcareous salts. We can have no difficulty in explaining the formation of the oxalate of lime in the cases under consideration.

I consider, therefore, the oxalate of lime not to be produced from saccharine matter formed in the digestive organs, but to be the result of the rearrangement of the elements of urea which, under the influence of disease, has become formed in great excess in the system.

[To be continued.]

## THE SANATORIUM.

*To the Editor of the Medical Gazette.*

SIR,

THE object of this communication is less to detail the particulars of a case of amputation of a portion of the lower jaw, than to call attention to an establishment where such operations may, under particular circumstances, be conveniently performed. Many persons come to London for the purpose of undergoing operations, to whom the expense of good and proper lodging and nursing may be a serious matter. The case which gives rise to this letter was of this class. A respectable yeoman was addressed to me for the purpose of following any course which I might recommend to rid him of a tumor of the lower jaw. The history of the case was as follows:—Two years ago, the patient, aged 50, discovered a suspicious tubercle not far from the centre of the lower lip. By the advice of his medical man he submitted to have it excised; and the wound healed in the usual course. From that time until last November he continued well; he then got an attack of what he termed influenza, and during that period he discovered a small tumor at the inferior border of the jaw, and about an inch in front of the masseter muscle. He spoke to his medical man about it, who ordered for him iodine and some other means; but as the tumor grew, and as it became the seat of occasional lancinating pain, he was

advised to go to London. He consulted me in the beginning of June, when the tumor had acquired the bulk of a pullet's egg: it extended from the edge of the masseter, about two inches forward, occupying more particularly the inferior border of the bone, lapping around it as it were. It was not easy to determine whether it originated in the bone or in the soft parts, or whether it was or was not moveable upon the jaw. The patient's general health was very good; the neighbouring glands were perfectly healthy, and his courage apparently equal to any thing. Although I felt some doubt whether the tumor had originated in the bone or the periosteum, whether it were osteo-sarcoma, or whether it were a cancerous degeneration of the submaxillary or one of the lymphatic glands, which had afterwards become more or less completely adherent to the jaw, I advised my patient to submit to the excision of as much of the jaw as might be necessary: but before this was done I advised him to take Mr. Arnott's opinion of the case: this he did; and Mr. Arnott entirely concurred in the prudence of the operation I recommended. All that remained was to look out for proper accommodation; and it occurred to me that this might possibly be found at an establishment recently formed in this neighbourhood, and called the Sanatorium.

With the mode of its establishment I have nothing to do: the house is a very good one, formerly the residence of Mr. Moreton Dyer, in the New Road.

I applied to the resident officer, from whom I ascertained that my patient could be admitted there, and have a large bed-room, board, medicine, and careful nursing, at a cost of two guineas a week. This perfectly suited my purpose, and he was admitted. On the 7th of June, in the presence of Mr. Samwell, Dr. Boyd, Mr. Scriven, the resident medical officer, and Mr. M'Ilree, I performed the operation. An incision was made from the right angle of the mouth to the inferior border of the lower jaw; another extended from that point, along the inferior border, to a point a little beyond the angle: the flap was turned up on the side of the face; the saw was applied at two points, so as to include the whole of the jaw which was implicated: the bone forceps completed the section. The portion of bone



was then separated from the soft parts, and the facial artery was not opened until the last cut. The artery was secured, the flap was laid down, and the patient was put to bed. In half an hour afterwards I left the house, but I had not been at home a quarter of an hour before a messenger arrived to say the patient was bleeding. I returned, and found the patient sitting in a chair, around which there was a good deal of blood, and Mr. Scriven standing by with his thumb in the wound. Having the ligatures and tenacula in readiness, I requested Mr. Scriven to remove his thumb: he did so, but no blood flowed: the ligature remained in the wound, and it was not easy to say from whence the blood could have come, as no other artery of any size besides the facial had been cut. The patient was again put to bed, and watched, but no further hæmorrhage took place. In six hours after operation, there being no further oozing, the parts were nicely brought together with hare-lip pins; all going on well. Between 11 and 12 o'clock at night, Mr. Scriven came down to tell me that he found the ligature altogether out of the wound. It was now clear from whence the hæmorrhage had come; it was equally clear, that if the wound were torn open the vessel might not be found, and that there would be a good deal of disturbance; it was also possible that the slight pressure of the sutures, as in the hare-lip operation, might prevent further hæmorrhage. Under these circumstances I determined to leave matters as they were, and to stay with the patient during the night—wondering all the time why the gentlemen had not put a ligature around the vessel when they saw it pumping. However, no further hæmorrhage occurred; and, with the exception of a small depending point, the wound had healed by the fourth day. On the twelfth, he walked out; and on the sixteenth, he went home.

The part which had been removed was carefully examined; the sub-maxillary gland was not included: the disease had affected a lymphatic gland over it, which had undergone a malignant degeneration, had intimately implicated the periosteum covering the jaw, but not the bone itself.

The case is instructive, in one point of view, by shewing how small an

amount of pressure is sufficient very frequently to restrain hæmorrhage from an important vessel, as the facial was in this case; and, as far as it goes, exemplifies the correctness of the principle upon which the Messrs. Koch, of Munich, act in restraining hæmorrhage from large arteries, by moderate pressure, without ligature; but it must take one a long time before the feeling of security would be acquired which is given by the use of the ligature.

I am not prepared to say to what extent this operation has succeeded in our own country, but in the *Annals of Heidelberg* for 1838, there was an account of the results of many such operations, from 1810 to 1830: they give 61 cases, in which portions of bone had been removed in the continuity of the jaw: 41 had been successful, 11 had failed: in 9 cases the result was not known. In 18 cases the bone had been disarticulated between 1793 and 1831; in 11 instances, successfully; in five, unsuccessfully; two from the ligature of the carotid; one from epilepsy; one from pleuropneumonia. It contains, also, the particulars of 19 cases since 1831, of which 17 were successful. In that single collection there are 98 cases; and the results go far to prove that the resection of a portion of the lower jaw is not, in itself, so grave an operation as to justify a surgeon in delaying it until the last moment.

With respect to my experience of the Institution in which my patient was placed, I found it all that could be desired; a large airy room, a good nurse, proper food, any medicines which were required, and the presence of the resident medical officer if it became necessary, at a cost of one guinea and a half a-week; half a guinea being remitted where a patient is attended by his own medical man.—I am, sir,

Your obedient servant,

B. PHILLIPS.

17, Wimpole Street, July 2, 1842.

## NEW URETHRAL SYRINGE.

*To the Editor of the Medical Gazette.*

SIR,

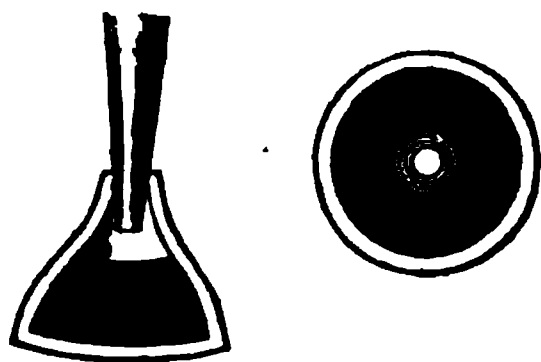
HAVE the goodness to insert the accompanying description of a new modification of urethral syringe, if you should

think it deserving of a place in the  
MEDICAL GAZETTE.—I am, sir,

Your obedient servant,  
WM. FRAZER.

Drum's Lane, Aberdeen,  
July 4, 1842.

The figure represents the extremity of a common syringe, the mouth of which is fitted into a funnel-shaped ivory nozzle, about five-eighths of an inch wide at the mouth, as is shewn in the cut, with a piece of



India rubber sheet stuck on with a solution of the same substance in spirit of turpentine. In using it, the lips of the urethra are gently drawn open, and the nozzle applied, and kept, with a slight degree of pressure, upon the glans. The piston is then pushed down with the other hand, and the instrument either kept in its position till it be time to expel the injection, or else immediately removed, the liquid being retained by previously closing with the fingers the mouth of the urethra.

By this plan, the acute pain occasioned by forcing a hard body into the inflamed, and turgid, and frequently highly sensitive mouth of the urethra, is completely avoided; and pain, I am afraid, is not the only bad consequence attending the use, in inexperienced hands, of the usual form of syringe, but sometimes laceration and serious aggravation of the symptoms.

A year's experience of it, and in cases well calculated for testing its utility, has strongly impressed me with a belief of its preference to the old form. Besides giving no pain, and running no risk of wounding the part, it is decidedly easier to manage, and is attended with no annoyance or unnecessary loss of time in its application. There can be no objection on the ground of expense: a turner will supply them at about half-a-crown per dozen (two specimens of some charged me at that ratio are enclosed), and they can be adapted equally well to

iron, bone, metal, or glass syringes. None of the substances used for injections, so far as I have observed, act on India rubber.

## ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

### *Observations on Life as the Cause of the Vital Phenomena.* 1842.

Es ist der Geist der sich den Körper baut.

It is the soul that builds for itself the body.

SUCH is the motto prefixed to the essay, the title of which stands at the head of our present article; and we think that never was a work written on any branch of natural philosophy more in accordance with the spirit that gave birth to the idea of the German poet. We take this early opportunity of stating, that our object in calling the attention of our readers to the pamphlet in question, is, rather to offer a few observations on the unphilosophical spirit in which it is written, than to follow its anonymous author through the mass of unfounded assertion and false reasoning which he has managed to condense in the few pages of his work. We propose to refer to the work itself, merely in order to furnish some examples of the absurdities into which every one must fall, who so far mistakes the true object of science, as to endeavour to discover the ultimate cause of any set of phenomena, instead of confining himself to the investigation of the laws which govern them. The attempt, in the middle of the nineteenth century, to show that any one class of phenomena is dependent on the action of a distinct and conscious entity, offers a melancholy example of the difficulty which the true spirit of the Baconian philosophy meets with in piercing the mists that enshroud certain classes of intellect.

The analogy on which the existence of these independent entities is founded, is evidently false; for if we except those cases in which we are the agents in producing mechanical effects, by the exertion of muscular force, in no one class of phenomena can the interference of any direct agent or entity be shown. As soon as we carry our views beyond the limited range in which our own mechanical efforts are confined, we find

ourselves placed in a world, the elements of which are retained in their respective places, not by the direct interference of any independent being, but by a property which appears to be inherent in all matter, viz. gravitation. If we descend to the surface of our globe, we see phenomena taking place which are still the result of the same property of matter: but, besides these, we observe other phenomena which cannot be accounted for by gravitation. We, therefore, are led to admit the existence of other properties of matter, or other forces. To these forces the names of chemical, electrical, &c. have been applied, according as we meet with phenomena which do not admit of being explained consistently with the laws that have been found to govern those forces, the existence of which has been already acknowledged. The processes which take place in organized beings form a well-marked class of phenomena, differing more or less from those that are observed in unorganized matter, and, therefore, the properties of matter on which these phenomena depend, have been called vital properties, or vital forces; in the same way as we employ the terms chemical forces, or electrical forces, to express certain other properties of matter. But to suppose that each of these forces was the result of the direct interference of an agent endowed with an innate power of action; that the various chemical phenomena took place under the direct control of a chemical soul, which presides over the chemical reactions that take place between the ultimate atoms of matter; to endeavour to prove that this agent possessed, not merely a separate existence, but actually to set about finding out its locality, whether it dwelt between the atoms, or whether it took up its abode in the centre of them, is a piece of folly, and which, in the present day, we did not expect to meet with. Yet such is the task, or, at least, one strictly analogous to it, that has furnished the subject of the present essay. Fortunately, however, for our author, he has chosen another field than chemistry on which to set his imagination to work, and one where he may be allowed to indulge in such lucubrations as those contained in the pamphlet before us, without being considered as unfit to remain at large amongst her Majesty's liege subjects. On account

of the difficulties that surround the study of physiology, and the complicated nature of the phenomena on which it is occupied, this science is necessarily in a less forward state than chemistry, and other branches of knowledge; and thus it is that we find those who pursue it still occasionally relapsing into the old fables of entities, instead of confining their investigations to the discovery of the laws that govern the vital phenomena, and endeavouring to attach to these phenomena laws of a greater degree of generalization. We must beg our readers to excuse us in thus laying before them those rules which should guide us in all our investigations; but we are fearful that these rules are but too often lost sight of, both in physiological and medical researches, and the present essay affords a striking example of the sterility that must attend the labours of those who neglect them. It would far exceed our limits were we to attempt to point out the various absurdities into which our author has been led. The essay commences by laying down certain hypotheses, which are designated as physiological facts, and in which is asserted the necessity of admitting the existence of some distinct vital agent endowed with innate intelligence, in order to explain physiological phenomena: the habitation of this being is stated to be in the semilunar ganglion (which of the three?). In order to support this hypothesis, our author finds it necessary to reject, *en masse*, all experiments that have been made on cold-blooded animals, because, as we suppose, this class of beings is possessed of a differently constituted vital agent to that found in birds and mammalia. We are then informed, that in order to produce a movement, it is necessary that the agent which gives rise to it should be possessed of an innate knowledge of the structures by which it acts: the vital agent, therefore, becomes gifted with a knowledge of the minute anatomy of every nervous fibril—of every capillary in the body. We would ask our author if he considers that the steam, which is the moving power in the steam-engine, is acquainted with the complicated machinery by which its power becomes applied? The analogy is very close, and we think it probable that the consciousness of the vapour will be ad-

mitted, rather than that the vital agent should lose any of its attributes: in fact, our author has shown a strong desire to make the vital agent, this phantom of his imagination, as perfect as possible; and as it costs no more to imagine the creation of a world, than of an atom, he has endowed it with the power of making calculations, and of carrying on abstruse processes of reasoning, quite independently of the mind, so that this latter part of our being is altogether superfluous. The dry details of anatomy are far too unimportant to stand in the way of these splendid theories: there can, indeed, be no doubt but that the innate anatomical knowledge possessed by the vital agent, and which, probably, has been revealed to our author, is far more perfect than that obtained by the aid of scalpel; for we are informed that the origin of the nervus accessorius is in the upper part of the semilunar ganglion, whence it serves to afford a path for the vital agent to reach the roots of the phrenic nerve, where its presence is constantly wanted to keep up the respiratory movements; the par vagum also arises from the same spot, offering a ready road for the vital agent to get to the brain. The division of these nerves, we are also told, is instantly followed by the cessation of all vital phenomena, at least in most instances, although it is known that animals will live some days after these nerves have been divided.

These short notices afford a fair specimen of the contents of the pamphlet. Did we consider it necessary to offer any further apology to our readers for so long occupying them with such a production, we have only to quote the following sentence contained in one of the closing paragraphs, by which we are informed, that "the writer of this notice has a work on Life nearly ready for the press." Could we flatter ourselves that the remarks contained in this article would exert any influence in stopping the infliction of the promised work on the public, we should feel ourselves fully repaid for the trouble we have taken. Should the *cacoethes scribendi* still remain unsubdued, we would point out animal magnetism as a fair field on which our author may exercise his powers; for the very absence of the capability of close reasoning, which is so strongly shown in the

present pamphlet, would render him peculiarly adapted for this imaginative science.

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## MEDICAL GAZETTE.

Friday, July 22, 1842.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

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### ON THE STUDY OF LUNACY.

THE consideration of the profession, and of the public generally, has been lately directed by Dr. Webster, in a pamphlet addressed to the Governors of Bethlem Hospital, to the little attention which is paid to the study of mental diseases, in the education of medical students, as well as to the meagre opportunities (we might almost say the absence of any opportunities at all) which are afforded to those who are desirous of obtaining information in this class of affections. It does, indeed, seem a matter of surprise that things should have been so long allowed to remain in their present condition, and that the wards of our lunatic asylums should so long have been closed as sources of instruction to the great body of the profession. It cannot be said that the advantage to be derived from the study of insanity is small, for the cases are very many in which judicious treatment will do much to alleviate the distressing and more aggravated symptoms under which the patient labours, and in a still greater number, careful management in the early periods of the attack, and attention to the first premonitory symptoms, will prevent the further progress of the affection, or lead to the permanent recovery of the sufferer. Still less can it be imagined that the subject is an unimportant one. No diseases are more calamitous than those which affect the mind, involving, as they do, not only

the moral life of the individual afflicted, but also, in many instances, the peace and happiness of his household. And few cases impose so much responsibility upon the professional attendant, whether they be considered in a medical or legal point of view. Independently of the benefits to be derived by the patient from the proper knowledge and treatment of his complaint, how many are the difficulties which arise in commissions *de lunatico inquirendo*! how important are the decisions of the jury on these occasions, and how much must they generally depend on the evidence given by the medical man!

Notwithstanding the acknowledged importance of the subject, it is well known that the practitioners in medicine who have given any moderate share of their attention to the study of lunacy are but few. A very small number of physicians, even in this metropolis, profess a competent acquaintance with it. They are almost exclusively the persons who have had the good fortune to be elected as medical officers to the asylums in the neighbourhood, and who have thus an opportunity of obtaining a practical acquaintance with it. The generality of practitioners are quite at a loss in what manner to direct the treatment of lunatics, and are glad to transfer the patient into other hands; or, if summoned to give evidence in a court of justice, they are too apt to expose their ignorance, and to be held up to derision and contempt by the examining counsel.

The reason of this—of so small an amount of information being possessed by the generality of practitioners on so important a class of diseases—is plain enough. It is sufficiently explained by the great difficulty—the impossibility to many persons—of obtaining the requisite knowledge. Insanity is a subject altogether omitted by most of the teachers in our schools, if we except a brief notice of it by the lecturers on

medical jurisprudence; and the only sources from which a practical acquaintance with its varieties and mode of treatment can be gained are kept entirely closed, at least so much so as to prevent any extended benefit being derived from them. “In Bethlem Hospital,” as Dr. Webster observes, “only three pupils are admitted to visit the patients with the physicians, and the expense attending it being much beyond the pecuniary means of most medical students, the number is not always complete. Again, at St. Luke’s, notwithstanding one of the objects proposed at the foundation of that charity, according to the original address in 1751, ‘was that of introducing more gentlemen of the faculty to the study and practice of one of the most important branches of physic,’ medical pupils are not admitted.” So that in this country the student possesses no means of rendering himself conversant with mental diseases. He must either pursue the subject on the continent, (in Germany, or France), where pupils are freely admitted to the hospitals for the insane, and where lectures are given upon the subject; or, if unable to do this, he must commence practice in ignorance of this branch of the profession, however strong may have been his desire to become familiar with it. The affections of the mind, no more than other diseases, can be learnt by instinct; and though reading may assist the student, it forms but a subsidiary means; the actual observation of cases being the only method by which a practical or useful knowledge can be obtained. Why, then, should these means be withheld? Why should not the wards of Bethlem and St. Luke’s be opened for the admission of a larger number of students, and the facilities of acquiring information on so extensive and important a range of diseases be conceded?

The exclusive regulations under which



our hospitals for the insane are governed, prove, moreover, powerful hindrances to the advancement of this department of medical science. Although it is a well known fact that the inhabitants of Great Britain are more liable to insanity than those of any other country in Europe, excepting Norway, we must confess that we are behind our continental neighbours in contributions made towards the elucidation of this disease, and that less comparative progress has, in our own country, been made in this than in almost any other branch of the healing art. Neither is it any subject for surprise, since the advance of a science necessarily bears a direct proportion to the number of its cultivators, and the opportunities afforded for its study, that our knowledge of the pathology and treatment of insanity should in this country be slow in its progress. Its students are few, and the materials whence improvement could most readily be derived are only allowed to be employed in a very limited manner.

It is the twofold advantage of ordinary hospitals, especially the institutions of this metropolis, that they provide for the comfort and treatment of the afflicted, and that they are also subservient to the instruction of a large number of pupils. Being the sources from which so many practitioners derived their earliest practical information, and the principles of treatment which have guided them through life, the beneficial influence of our hospitals is almost unlimited; it is not confined to the immediate district in which they are situated, but extends throughout the country; and having contributed so essentially to the advance of medical science, and to the education of medical men, their good effect can only be estimated by reference to the advantage derived by the community from the better rationale and treatment of disease.

To effect the former of these pur-

poses, namely, to promote the comfort and recovery of their inmates, we grant that the lunatic asylums of this country are, in many respects, well adapted. Their regulations have of late years been greatly improved; kindness and gentle treatment have been substituted for harshness and severity; and the good results of the alteration have not been slow to follow. And why should they be deprived of the other means of extending their utility? Since the year 1684, when, according to ancient records, Bethlem Hospital admitted into its wards seventy-three lunatic patients, and since the establishment of St. Luke's in 1750, about 40,000 insane persons have been treated in these two institutions. But how little has been the knowledge and experience gained by the great body of the profession in this country from so extensive a field of observation! Had those opportunities of information been cultivated as in other hospitals, our knowledge of this class of diseases would no doubt have been greatly increased, and the good effect of the institutions much more extended.

Although we fully agree with Dr. Webster as to the advantages of opening the doors of Bethlem and St. Luke's Hospitals, we should be unwilling to go so far with him as to make the study of lunacy a *sine qua non* of medical education, by requiring from the student certificates of having attended, during a certain period, the practice of one of these institutions. We allow that "these subjects are more essential than some of the subsidiary objects of inquiry to which more or less attention has been recently directed;" but we are unwilling to add another subject to the already too extended course which is required as the minimum of medical education. The attendance at eye infirmaries, lying-in hospitals, and other institutions of the sort, is doubtless highly beneficial; but it should not be made

*compulsory* on all. Neither can we expect every student in medicine to obtain a competent knowledge of the intricate and difficult subject of insanity, however desirable it might be. Our object is to see the opportunity given to prosecute this study, and to allow those to embrace it who are willing so to do. We would have those ample sources of instruction which our asylums afford more freely opened, and that soil which has so long lain merely fallow better cultivated; that men may no longer be obliged to go on to the continent to obtain information which is so abundant in our own country. If the wards of the hospitals for the insane in this metropolis be opened for the admission of pupils, a new impulse will be given to the study of mental diseases, and the best chance will be afforded of clearing away that cloud of mystery and uncertainty which has hitherto obscured their nature and interfered with their treatment.

Though the same proposition has before, on several occasions, been proposed or hinted at, the thanks of the profession, and of the public generally, are due to Dr. Webster for bringing the subject more prominently forward, and representing more strongly the necessity of some alteration to the governors of Bethlem Hospital. It is a matter of no small importance; and we heartily wish that the directors of this valuable institution may be willing to agree with him as to the advantage of extending its utility by rendering it available for the instruction of young men, preparatory to their entering on the active duties of their profession. The proposition will doubtless receive the general approbation of the profession; and we regret that there are the names of so few medical men upon the list of the governors of that hospital, to assist, by their votes and influence, in carrying so desirable a measure. It is to be feared that it will meet with much opposition

from many persons who, from prejudice and the fear of its interfering with the present object of the institution, and diminishing the chances of the recovery of the inmates, will endeavour to resist such an innovation. There are, no doubt, some objections to the plan proposed; but they appear to us to possess less weight than is usually attributed to them, and to bear but small proportion to the advantages which would result. We leave, however, the further consideration of them for the present, as it is our intention to take an early opportunity of again referring to the subject.

#### MEDICAL REFORM.

As much interest and anxiety exist upon this subject (see various articles in our present and recent numbers), we believe we may confidently state that no new charter will be granted to either of the Colleges, nor any act of legislation passed during the present session in connection with medical reform.

#### PETITION REGARDING MEDICAL REFORM.\*

(*For the London Medical Gazette.*)

At a meeting of the Medical Practitioners of Nottingham and the neighbourhood, held at the Assembly Rooms, Low Pavement, on Tuesday, July 12, 1842, the following resolutions were agreed to,—Dr. Hutchinson in the Chair:—

Moved by Robert Davison, Esq., seconded by Isaac Massey, Esq.:—1. That petitions be presented to her most gracious Majesty the Queen, and also to the House of Commons, praying that no charter be granted to the Colleges of Physicians and Surgeons in London, or to any medical institution, until the whole subject of medical reform be brought forward, and fully discussed before Parliament.

Moved by Wright Allen, Esq., seconded by Thomas A. Burrows, Esq.:—2. That

\* The subjoined paper came to hand last week, but too late to comply with the request of inserting it, as this journal is published on Friday.—*ED. GAZ.*

the Chairman write to, and request his Grace the Duke of Newcastle to present the petition to the Queen.

Moved by J. N. Thompson, Esq., seconded by Augustus Darby, Esq.:—3. That the petition to the House of Commons be entrusted for presentation to the Right Hon. Lord John Russell.

Moved by John Caunt, Esq., seconded by Isaac Massey, Esq.:—4. That the thanks of this meeting be presented to Thomas Wakley, Esq. M.P., for his indefatigable exertions, in and out of Parliament, in the cause of medical reform.

Moved by Augustus Darby, Esq., seconded by Thos. Beveridge, Esq.:—5. That the proceedings of this meeting, with its resolutions, be transmitted to the *Lancet*, *Medical Gazette*, and *Provincial Medical Journal*.

Moved by Wright Allen, Esq., seconded by Dr. Taylor:—6. That a copy of these resolutions be also sent to the Members for the Town and County of Nottingham, requesting them to support the objects of the petitions.

(Signed) R. HUTCHINSON.

The Chairman having left the chair, it was moved by J. N. Thompson, Esq., seconded by R. Truman, Esq.:—7. That the thanks of this meeting be given to Dr. Hutchinson for his gentlemanly conduct in the chair.

The following is a copy of the petitions presented to her most gracious Majesty the Queen, and to the House of Commons, with the signatures of the medical practitioners.

*To the Right Hon. and Hon. the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled.*

The Petition of the undersigned Physicians and Surgeons of Nottingham and its neighbourhood,

Humbly sheweth,

That your petitioners have been credibly informed that the Right Hon. the Secretary of State for the Home Department intends to ask leave of your Hon. House to introduce a Bill this session to enable her Majesty to grant a new charter to the Royal Colleges of Physicians and Surgeons. Your petitioners, believing that the granting such a charter would prejudice the general question of medical reform, and might be highly injurious to the interests of the general body of the medical profession, pray that no such measure be entertained by your Hon. House, with reference to granting a new charter to the Colleges of Physicians and Surgeons in London, or any other measure of partial medical legislation be taken into consideration by your Hon. House, until the whole subject of medical reform be brought before

Parliament, and receive full publicity and discussion.

*To the Queen's Most Excellent Majesty.*

The dutiful Petition of the undersigned Physicians and Surgeons, residing in Nottingham and its neighbourhood,

Humbly sheweth,

That your petitioners having learned that a measure of general medical reform is announced by your Majesty's principal Secretary of State for the Home Department; and your petitioners believing that such a measure, on an enlarged and liberal basis, is highly necessary to the health of your Majesty's subjects, and is urgently desired by the great body of the medical profession, your petitioners humbly pray, that your Majesty will be graciously pleased to defer granting any charter to any medical institution, until such measure has been brought before Parliament, and received full publicity and discussion.

R. Hutchinson, M.D., Physician to the General Hospital; Rd. Davison, Senior Surgeon, Nottingham Dispensary; Thomas Beveridge; Becket Truman; John Caunt; J. A. Burrows; Augustus Darby; Wright Allen; Henry Taylor, M.D.; Thomas Godfery; Joseph Thompson, Surgeon to the Dispensary and Union Hospital; J. M. Davidson, M.D. Senior Physician to General Hospital; J. W. Thompson, Honorary Surgeon to Nottingham Dispensary; J. Massey, Honorary Surgeon to Nottingham Dispensary; Nathan Cooper; Thomas G. Heathcote; W. L. Billings; Thomas Powel, M.R.C.S.; Francis Sibson; John Higginbottom; Thomas Wilson; Henry Taylor, Honorary Surgeon to Nottingham Union; William Watts, M.R.C.S.; J. C. Williams, M.D. Physician to General Hospital; Booth Eddison; James Wolstenholme; W. G. Jalland; H. C. Attenborrow, Surgeon to County Gaol.

#### FARTHER EXTRACTS REGARDING MEDICAL REFORM.

IN the House of Commons, on Tuesday the 5th instant, some questions were put to Sir James Graham by Lord John Russell, from the answers given to which, it would appear that the Home Secretary intends, before the close of the present parliamentary session, to ask leave to introduce a Bill for enabling the Crown to grant new Charters to the Colleges of Physicians and Surgeons in London, which would come into operation immediately, while the Medical Profession

Bill, which the Right Honourable Secretary means to submit to Parliament, cannot be discussed until next session. The Council of the North of England Medical Association, conceiving that the granting of the said charters would prejudice the general question of medical reform, have petitioned both Houses of Parliament not to authorize the giving of the said charters until the whole subject shall have been discussed by the legislature. The Council have also taken steps for sending petitions of a similar kind from Newcastle, Gateshead, Sunderland, Durham, Carlisle, Berwick, North and South Shields, &c. The following is a copy of their petition to the House of Commons, which has been duly signed and forwarded for presentation to Lord Howick. (The Bishop of Durham has been requested to present the petition to the Upper House.)

*To the Right Honourable and Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled.*

The Petition of the President, Vice-Presidents, and Council of the North of England Medical Association, assembled at Newcastle-upon Tyne, July 2th, 1842,

Humbly sheweth,—That your Petitioners represent a Society consisting of 170 duly qualified Practitioners of Medicine and Surgery, resident in the counties of Durham, Northumberland, and Cumberland.

That your Petitioners have derived much satisfaction from the announcement reported to have been made to your Honourable House by one of Her Majesty's Ministers, of his intention to ask leave to bring into Parliament a Bill relating to the government of the Medical Profession in Great Britain and Ireland.

That your Petitioners, although unable to procure any authentic information respecting the provisions of the above-named Bill, have been given to understand that a proposition is shortly to be made to your Honourable House to enable Her Majesty to grant new charters to the College of Physicians and the College of Surgeons, of London, and that it is intended that such charters, if granted, shall come into operation almost immediately, whereas the clauses of the aforesaid Medical Bill will not be discussed until the next session of Parliament.

Your Petitioners conceiving that the community at large of the United Kingdom is interested in the proper regulation of the medical profession, not less deeply than are the individual members thereof, beg respectfully, but earnestly, to urge the claims of the profession to the consideration of the Legislature. Feeling, moreover, assured that no measure relating thereto can be either satisfactory or beneficial, unless it be con-

structed on broad and general principles, and that the scope and character of any future enactment for regulating the medical polity of this country must be materially influenced by the powers and authority which may be vested in the presently existing Medical Corporations, they implore your Honourable House not to sanction the giving of any new charter to the College of Physicians, or to the College of Surgeons, in London, until opportunity shall have been afforded of discussing fully and carefully the provisions of the Medical Bill, which they believe the Right Honourable the Secretary of State for the Home Department has signified his intention of submitting to the notice of your Honourable House.

And your Petitioners, as in duty bound, will ever pray, &c.

## REMUNERATION OF MEDICAL OFFICERS.

*To the Editor of the Medical Gazette.*

SIR,

I beg to hand for insertion in the next number of your journal the accompanying letter from the late President of the Royal College of Surgeons—I am, sir,

Your obedient servant,

THOMAS HOVELL.

Clapton, July 18, 1842.

### LETTER FROM MR. GUTHRIE.

DEAR SIR,—In my letter of the 12th of March, I gave you some explanation of the Medical Order of the Poor-Law Commissioners, for the better payment of the Medical Officers of Unions, for what is called their extraordinary services, and I assured you that my endeavours should be continued with the view of effecting a change in the manner in which they were paid for their ordinary services. I have now the pleasure to acquaint you that these efforts have been successful, and that the Secretary of State for the Home Department, Sir James Graham, and the senior Poor-Law Commissioner in London, Mr. Lewis have been pleased to accede to the suggestions I had the honour to make to them on the part of the Council of the Royal College of Surgeons on this point. Sir James Graham intimated his intention to propose them to the government, to state them in parliament, and to have them carried out under the Act now awaiting the sanction of the legislature. The act of grace and favour which they will thus bestow upon the medical profession will be most important, as it

will complete the emancipation of its members employed under the Poor Laws from the degradation to which they were obliged to submit under the existing regulations. It will, together with the medical order of March last, obtain for the poor that strict and good medical advice and assistance of which I fear hitherto they have had rather the semblance than the reality; and I can assure you that the Secretary of State and the Poor-Law Commissioner only yielded their assent to my observations on their being convinced that the grant of an additional sum of money, equal to that already paid for the medical relief of the poor, was absolutely necessary for their comfort when suffering from the misery and distress which sickness must always bring with it, and which an insufficient medical attendance may render permanent. The details of the measure thus nobly granted by the Secretary of State and Poor-Law Commissioner, as much, indeed more, for the benefit of the poor, than for the medical profession, will be in proper time explained by them. I have also the satisfaction of assuring you that I have spoken to many members of both Houses of Parliament of different political sentiments, on this subject, and they have all assured me in the strongest manner of their determination to support the Secretary of State in any thing he might think fit to recommend in furtherance of this object. In thanking you for the kind manner in which you and the other members of the deputation have been pleased to express yourselves towards me, for the interest I have taken in this matter, I assure you that I do not feel that I have deserved more than the very ordinary reputation of doing what I felt to be a duty.

I have been very fortunate in having some private influence with Mr. G. C. Lewis, which has enabled me to press my representations in a manner which I could not otherwise have done, and I am thankful it has been of use. The pains I have bestowed upon the object which is now I trust about to be obtained, are only a continuation of that interest I have felt it my duty more particularly to take in every thing relating to the profession of surgery, since I became one of the governing body in London in that department of medicine.

On my appointment to the council of the College of Surgeons, I devoted the first year to the examination of its records and its regulations, with the hope of being able to assist in rendering it what it ought to be,—one of the greatest and most useful institutions in Europe. My early education with men of all ranks, characters, and opinions,—the necessity in which I found myself placed of controlling, and sometimes governing, large bodies of men, at an age when many had

scarcely begun to learn obedience,—taught me that strict fairness, honesty, and justice, were the principal means by which this was to be effected. I brought these opinions with me into the Council of the College of Surgeons, and after I had made myself thoroughly acquainted with its rights and privileges, as well as with its defects, I applied myself to the removal of all the various grievances and abuses which had crept into the management of its affairs, or were incidental to its constitution, and not adapted to the spirit of the times. My elder brethren, all since dead, did not receive these efforts very kindly: they pronounced me a greater Radical than even Mr. Joseph Hume, and declared that they would not sit at the same table with me if they could avoid it. These opinions, much as I respected the private virtues and acquirements of my colleagues, did not influence me much on points in which the public was concerned. I steadily pursued my objects, and year after year have proposed and repropounded, and, when beaten, have returned again to maintain my opinions, until now, when retiring from the office of president, I can fairly say there is not one abuse or grievance remaining. I believe I may say that much has also been done for the advancement of science, for the improvement of knowledge, and that little or nothing has been left undone which can give personal ease, comfort, or satisfaction, to the members of the body generally.

I might, if I pleased, congratulate myself upon being, and having been, the most successful reformer in the profession, although I admit that many have talked and written a great deal more about abuses and grievances than I have done; but no one has had the good fortune to remove so many. I apprehend, however, that the word *reform* does not bear with many gentlemen the same meaning as is usually attributed to it, and that with them it is understood to imply the destruction, or the subversion, not the reformation, of the existing order of things, in which sense I am not a reformer, for I am not a destructive. Having on eight different occasions taken a solemn oath to preserve and maintain the honour and integrity of the College, it has not occurred to me that the best way of doing this would be by aiding in the establishment of one-faculty, or any other society, by whatever name it may be called, which would interfere with the utility, the rights, or privileges of the College of Surgeons, and end in its destruction. Although I have not supported any of these schemes, and have expressed my determination to resist them whenever officially called upon to do so, I have not yet had occasion to say one word on the subject, having never met with any one member of any government who did not at



once declare them to be visionary, and that they had themselves never thought of subverting the existing ancient medical institutions of the country, however earnestly desirous to see them undergo any alteration and improvement that could tend to the advancement, honour, and character of the profession. It has been urged against the Council of the College of Surgeons that it is self-elective, and its Examiners are appointed for life, two points which it is not in the power of the Council to amend without an alteration of their charter; and in the year 1834, a supplemental charter and ordinance were prepared, and steps taken by the Council of the College, to obviate these evils, and to appoint Examiners in Midwifery. These improvements were deferred in consequence of the introduction of Messrs. Warburton and Hawes's bills into parliament, which, if they did no more, have at least prevented the Council of the College from trying to effect these desirable objects. I will not relax in my efforts while any thing remains to be done, which, in my opinion, is likely to be advantageous to the profession; and I shall be at all times happy to advise with you or any other gentlemen who may think my services likely to be of use to them.

I am, my dear sir,  
Very faithfully yours,  
G. J. GUTHRIE.

4, Berkeley Street, Berkeley Street,  
July 15, 1842.

To Thomas Hovell, Esq.

Senior Member of the Deputation  
from the Surgeons of the London  
Unions to the President and Vice-  
Presidents of the Royal College  
of Surgeons.

## EXCISION OF THE ELBOW-JOINT.

M. ROBERT presented a woman, aged 26 years, on whom he had practised the operation of excision of the elbow-joint. The disease rendering the operation necessary was caries of the humero-cubital articulation, following a fall on the elbow. There were several fistulous openings about the olecranon. In the fold of the arm were two deep sinuses penetrating into the joint. The soft parts around were moderately engorged. The operation was effected by dividing and reflecting the integuments over the olecranon. The humerus was sawn through immediately above the condyles, the ulna below the coronary process, and the radius just below its articular extremity. The limb was placed in the apparatus of M. Guizot. But little reaction ensued, and the fever and sleeplessness which had previously harassed the patient ceased imme-

diately. Nevertheless, the suppuration continued a long time, it being impossible to approximate the divided ends of the bones, and the wound was not completely cicatrized for 18 months. At the time of observation, two years and three months after the operation, it was interesting to observe the manner in which the movements of the fore-arm were executed.

The limb had regained nearly the same size as that of the opposite side. When it was in repose, and hanging by the side of the thorax, there was perceived between the extremity of the humerus and the bones of the forearm a separation of nearly three fingers' breadth, occupied by a dense, but very flexible tissue, which allowed the forearm to move freely in all directions. The limb in this position looked as if impotent or paralysed. But when the patient attempted to bend the forearm, the space comprised between the bones of the arm and forearm was effaced by the ascent of the latter, which mounted to obtain a fulcrum from the lower surface of the humerus, and the bendment of flexion was then effected, being carried to such an extent that the forearm formed a right angle with the arm. The patient could easily carry the hand to the head or to the opposite shoulder, and could raise tolerably heavy weights, as a chair. The power of pronating the hand existed in a moderate degree. The movements of the fingers were perfectly free. She could grasp, with tolerable force, bodies placed in her hand, and could hold objects of very small size. For several months she had resumed her occupation as a sempstress; she is accustomed to use her needle with the left hand, holding and fixing the work with the right. To avoid the fatigue which would result from long-continued flexion of the forearm, she wears, while at work, a small apparatus composed of two pieces of leather, one embracing the upper, the other the forearm, which are joined at the fold of the limb.—*Séances de l'Académie des Sciences.*

## EMPLOYMENT OF ERGOT OF RYE IN CASES OF PARAPLEGIA.

In an essay on this subject, M. Payan commences by stating that we should not consider the ergot of rye as an excitor of uterine contractions only, many facts shewing that it acts also on the rectum, the bladder, and lower extremities, when these parts are in an asthenic condition, in the same manner as it affects the uterus in inertia of that organ. And as we cannot reasonably attribute to this agent similar specific effects on parts so essentially different, we must refer its action to some other organ on which

these different parts are dependent. M. Payan, therefore, considers that the ergot of rye acts primarily and especially on the spinal cord.

This being granted, it follows that we may rationally have recourse to the employment of the ergot in paraplegia, and cases of weakness of the lower extremities, depending on defective action of the spinal cord, without alteration in its structure. M. Payan adds the three following facts in proof of the justice of his observations. A man, 40 years old, fell on his perineum, and paraplegia followed. He recovered entirely under treatment at Marseilles; and subsequently meeting with a similar accident at Aix, was admitted into the hospital of that place. In the absence of M. Payan various remedies were employed to remove the paraplegia, as liniments, blisters, &c. but without success. On the return of M. Payan, these measures were substituted by the ergot of rye, given to the extent of a drachm. Two hours afterwards the muscles began to agitate the limb, and he recovered a certain degree of power every day. At the end of six days the patient could walk with the assistance of a stick. During a fortnight the ergot was administered in two-drachm doses; the treatment was then suspended on account of some gastric irritation, but the amelioration continued, and in a month the patient left the hospital.

A man, aged 30 years, was submitted to the care of M. Payan, with paraplegia. Various active remedies had been employed without success. The inferior extremities were able to bear the weight of the body, but if he attempted to walk many steps they gave way under him. The right leg was insensible, the left partially atrophied. The bladder had lost its power of contraction. A drachm of the ergot was administered each morning; after a few days the dose was increased to two drachms. At the same time friction on the spine and lower extremities with an irritating liniment was employed. After eighteen days both the lower limbs had become so far recovered, that the patient was enabled to return to his home.

A labourer was suffering under very advanced paraplegia as the result of a severe saturnine affection. Various remedies had been unsuccessfully employed to combat the disease. The ergot of rye effected a complete cure.

From these three cases M. Payan infers not only the efficacy, but also the entire innocence of this remedy, which he has in many instances employed in large and long continued doses without any ill effect.—*Journal de Pharmacie*.

## REUNION OF TWO FINGERS

COMPLETELY SEPARATED FROM THE HAND,  
AND EACH DIVIDED INTO TWO PORTIONS.

By SIGNOR DELLA FANTERIA.

A GIRL, 14 years old, was engaged with another person in some domestic occupation, when the latter accidentally let fall a knife, which cut off two of her fingers below the first phalanx. The author being soon after summoned, found the two pieces in some meal on which the patient's hand was resting at the time of the accident; but he discovered, to his great surprise, that each of them was divided into two portions. However, he determined to try to unite them; and having put the bits together, he kept them all in their places with sutures and strips of plaster. In a few days the adhesion was completed, and the patient ultimately recovered the entire use of her fingers.

It is necessary to mention, that the authenticity of this strange case was confirmed by Professors Centofanti and Vacca.—*Annali Universali di Medicina*; and *Brit. and For. Med. Rev.*

## EXTEMPORANEOUS PRODUCTION OF MILK.

M. DICHOSE, a Russian chemist, proposed the following plan for the preservation and extemporaneous preparation of milk. He evaporates newly-drawn milk, at a very gentle heat, till it is all brought to a state of fine powder. It is then put into small glass bottles, which are completely filled, and hermetically sealed, with ground glass stoppers. A small quantity of the powder thus obtained, dissolved in an appropriate quantity of water, affords on the instant a milk of very good quality. The powder will remain good for a great length of time.—*Gaz. des Hôp.*; and *Brit. and For. Med. Rev.*

## ON THE INFLUENCE OF THE NERVES ON MUSCULAR IRRITABILITY.

M. LONGET found, that when a nerve of voluntary motion was cut across, on the fourth day thereafter, the muscles to which it was distributed could not be excited to contract by irritating the nerves by means of a weak galvanic current. The muscles, however, supplied by this nerve contract immediately on the application of the slightest stimulus to themselves, even at the end of fifteen days. Even after the lapse of a month, direct stimulation causes them to contract slightly, and may be recognized at the end of seven weeks; no irritation of

the nervous twigs, however, excites the slightest motion after the fourth day. From the seventh week, the muscular fibre, already much blanched, seems to undergo a complete degeneration, and soon ceases to contract in the slightest, even with the most powerful stimulants. It is only, then, in consequence of a lesion of its nutrition, that muscular fibre, in losing its organic characters, loses also its essential characteristic, irritability, which, however, as has been seen, remains a long time after all nervous influence has been suppressed. — *Comptes Rendus des Seances de l'Academie des Sciences*; and *Edinburgh Medical and Surgical Journal*.

#### ON THE SOLUBILITY OF FIBRINE AND OF COAGULATED ALBUMEN.

BY M. WÖHLER.

M. GMBLIN many years ago ascertained that coagulated albumen dissolved perfectly in water whose temperature was raised to 200° cent. MM. Wöhler and J. Vogel have made numerous experiments on the same subject, and ascertained that this solution takes place at 150°. They introduced coagulated albumen into tubes containing a certain quantity of water, closed them hermetically, and boiled them in oil at a temperature of 150° Cent.

The fibrine of the blood as well as muscular fibre boiled in water dissolved in the same manner; their solution was almost complete, little or no residue being left. Copious precipitates were thrown down from these solutions by means of acids; by nitric acid, even when it was very much diluted. The precipitate formed by acetic acid redissolved in an excess of the same. — *Journal de Pharmacie*; and *Edinburgh Medical and Surgical Journal*.

#### ROYAL COLLEGE OF SURGEONS.

##### ELECTION OF OFFICERS.

At a Council of the Royal College of Surgeons, on Thursday the 14th inst., Anthony White, Esq. was elected President, and John Goldwyer Andrews, Esq., and Sir Benjamin Brodie, Bart., were elected Vice-Presidents of the College for the ensuing year.

##### LIST OF GENTLEMEN ADMITTED MEMBERS.

*Friday, July 15, 1842.*

R. Niblett.—R. Cooper.—H. D. Fowler.—J. Hutchison.—R. T. D. Harrison.—J. Campbell.—P. Mackey.—W. Watt.—A. Cox.—J. A. Powell.—C. N. Wilkinson.

*Monday, July 18, 1842.*

F. P. Loinsworth.—R. Dinham.—R. Smyth.—W. Bennett.—H. O. Hawthorn.—J. A. Palm.—R. Greenhalgh.—C. P. Fitzgerald.—J. I. Willes.—J. U. Easson.—C. Caffey.

#### APOTHECARIES' HALL.

##### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, July 14, 1842.*

L. W. Moore, Norwich.—J. Gay, Swindon, Wiltshire.—T. S. Eyre, Army.—T. C. Leah, Manchester.—G. Johnson, Goudhurst, Kent.—J. S. Collins, Leominster, Herefordshire.

#### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, July 9, 1842.

Small Pox .....	8
Measles .....	20
Scarlatina .....	20
Hooping Cough .....	21
Croup .....	10
Thrush .....	5
Diarrhoea .....	13
Dysentery .....	0
Cholera .....	0
Influenza .....	2
Typhus .....	17
Erysipelas .....	3
Syphilis .....	0
Hydrophobia .....	1
Diseases of the Brain, Nerves, and Senses ..	126
Diseases of the Lungs and other Organs of Respiration .....	218
Diseases of the Heart and Blood-vessels ....	20
Diseases of the Stomach, Liver, and other Organs of Digestion .....	70
Diseases of the Kidneys, &c.....	3
Childbed .....	4
Ovarian Dropsy .....	1
Disease of Uterus, &c. ....	1
Rheumatism .....	3
Diseases of Joints, &c. ....	0
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	86
Old Age or Natural Decay .....	24
Deaths by Violence, Privation, or Intempe- rance .....	23
Causes not specified .....	0
Deaths from all Causes .....	745

#### METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.*

July.	Thermometer.	Barometer.
Wednesday 13	from 48 to 70	30.08 to 30.14
Thursday . 14	47 72	30.25 30.33
Friday . . . 15	46 72	30.33 30.25
Saturday . 16	47 68	30.18 30.08
Sunday . . 17	52 60	29.93 29.81
Monday . . 18	54 73	29.80 29.84
Tuesday . 19	57 71	29.85 29.77

Wind, S. and S.W. on the 13th, 14th, and 18th; N. and N.E. on the 15th, 16th, 17th, and 19th.

Generally overcast, with rain occasionally on the 18th, 19th, and 20th, otherwise generally clear.

Rain fallen, .09 of an inch.

CHARLES HENRY ADAMS.

WILSON & OSILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, JULY 29, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Exanthemata. They are contagious; sometimes epidemic. Period of the eruption; period of incubation. Theory of contagious febrile diseases. Continued fever.*

Of the numerous complaints which are ranked among the diseases of the skin, some, I observed in my last lecture, are attended with fever, and some are not. Among the former there is a highly interesting group, distinguished by other and more important characters than the mere presence of fever, or peculiar marks upon the skin; characters that enabled Cullen to collect these diseases into a separate order, to which he gave the name of *exanthemata*. This is his description of them. "Morbi contagiosi, semel tantum in decursu vitæ aliquem afficientes; cum febre incipientes; definito tempore apparent phlogoses, sæpe plures, exigue, per cutem sparse." Contagious diseases; attacking a person once only in his life; beginning with fever. At a definite period small eruptions appear, often numerous, scattered over the skin. These, you will allow, are very remarkable characters. They are not all strictly and universally true, perhaps, of all the forms of disease which I propose to bring now under your notice; but they apply with more or less exactness to continued fever, to the plague, to small-pox, chicken-pox, measles, scarlet fever, and erysipelas.

Hooping-cough, and the mumps, might be placed in the same catalogue, although

there is no specific eruption on the skin in them: but I have already spoken of these two disorders.

Before I take up the consideration of any one of these diseases in particular, I shall premise a brief survey of certain circumstances that are more or less common to them all. This preliminary examination of the exanthemata as a class, will give you, I trust, clearer ideas respecting them: at any rate it will enable me to dispense with much needless repetition afterwards, and so to save both your time and my own; a matter of some consequence at this advanced period of the session.

In the first place, then, the diseases comprehended in this group are *contagious* diseases. You will hear persons disputing about the *term* contagion; but such disputes can only arise from the want of a distinct definition of the sense in which it is employed. I understand a disorder to be contagious, when it is in any way *communicable* from one person to another. Some would restrict the word contagion to the cases in which there must be absolute *contact* of the healthy body with the sick body, or with its visible offscourings. When the disease can be conveyed through the medium of the atmosphere, or by means of other intermediate substances called fomites, they would call it *infectious*. And there is no objection to such a distinction, provided it is understood by the reader, or hearer, as well as by the writer or speaker. But since in all cases the disease is introduced into the person of the recipient by particles of matter proceeding from the person of the sick, and since it seems very unimportant whether those particles are in a solid or in a gaseous form, whether they are imparted by direct contact of the two human bodies, or by being wafted through the air, or carried upon articles of clothing, I shall include both and all these modes of communication under the single term, contagion. This, in fact, is what is done in common discourse:

all disorders that are "catching," I shall take leave to consider *contagious*.

In this sense I believe that all the diseases just now enumerated *are* contagious; some, no doubt, much more strongly and distinctly so than others. Some of them, indeed, are undeniably contagious. For example, we are privy to, and sometimes willing agents in, the communication of small-pox from one individual to another. There are others concerning the contagious nature of which medical opinion is less settled and unanimous. Many persons deny that continued fever is communicable from person to person. The evidence from which I conclude that it is so, I will lay before you when I have described that disorder. Even they who admit that it is contagious, are of opinion, many of them, that it sometimes breaks out spontaneously, without the intervention of any specific virus. No one questions, I fancy, the contagious properties of measles; or of scarlet fever. Whether the plague, and whether erysipelas, be always or ever so produced, has been thought more doubtful. There is every reason for believing that the small-pox, at least, has now no other source than contagion. How it first arose it may be difficult to conjecture; but it is never known to originate spontaneously now-a-days.

Small-pox may in truth be regarded as the *παράδειγμα* of this group of diseases. I shall therefore take, by anticipation, some well-ascertained facts in its history, for the sake of illustrating the general subject. It is a malady which could scarcely be mistaken for any other; and of which the horrible aspect and fatal tendency are so strongly marked, that its appearance has always been watched with affright by mankind in general, and with intense interest by the philosophic physician.

In the acme of this disease, when it is severe, the whole surface of the body is covered with innumerable little pustules. A minute portion of the matter contained in any one of these pustules, just so much as may suffice to moisten the point of a lancet, is inserted, we will suppose, beneath the cuticle of a healthy man, who has not been near the sick man. What follows this engrafting? Nothing, apparently, for several days: but then febrile symptoms burst forth; and by and by a crop of papule appear sprinkled over the skin; and these gradually ripen into pustules precisely resembling that from which the engrafted drop was taken.

The very same phenomena ensue, if a healthy man enters the chamber of a small-pox patient, and breathes, for a certain time, an atmosphere tainted with the emanations from his body.

The points to be noticed here are—1, the manifest introduction of the virus into the

system: 2, its dormancy for a while, in other words the occurrence of a period of incubation: 3, the breaking out, at length, of a disease identical in its symptoms and in its character with that of the first patient: and 4 (most surprising of all), the enormous increase and multiplication of the poisonous matter.

I say the *history* of small-pox leads to the settled belief that this disorder, of which few persons are not readily susceptible, never occurs, except from contagion. It was quite unknown in Europe till the beginning of the eighth century. No mention of any such malady is to be found in the Greek or Roman authors of antiquity. Now whatever may have been the deficiencies of the ancient physicians, they were excellent observers, and capital describers of disease: and it is impossible that a disorder so diffusive, and marked by characters so definite and conspicuous, should have escaped their notice, or have been *obscurely* portrayed (if known) in their writings.

On the other hand, Mr. Moore, in his learned and interesting *History of the Small-pox*, has shewn that it prevailed in China and Hindostan from a very early period; even more than 1000 years before the time of our Saviour. That it did not sooner extend westward into Persia, and thence into Greece, may be attributed partly to the horror which the complaint everywhere inspired, and the attempts that were consequently made to check its progress by prohibiting all communication with the sick, partly to the limited intercourse which then took place among the eastern nations, but principally to the peculiar situation of the regions through which the infection was diffused; separated as they were from the rest of the world by immense deserts and by the ocean.

The disease is said to have broken out in *Arabia* at the siege of Mecca, in the year in which Mahomet was born; i. e. in the sixth century. It was widely propagated by his wars, and by those of the Arabs afterwards; and, as I said before, it is generally believed to have first found entrance into Europe at the time of the overthrow of the Gothic monarchy in Spain by the Moors; when to avenge the well-known outrage upon his daughter "Count Julian called the invaders." Whosoever and wheresoever it came, it spread with fearful rapidity and havoc.

What I wish you to remark is this: that while almost all men are prone to take the disorder, large portions of the world have remained for centuries entirely exempt from it, until at length it was imported; and that then it infallibly diffused and established itself in those parts.

Of the more modern history of the disease our knowledge is more precise and sure. It tends uniformly to the same conclusion.



There was no small-pox in the New World before its discovery by Columbus in 1492. In 1517 the disease was imported into St. Domingo. Three years later, in one of the Spanish expeditions from Cuba to Mexico, a negro covered with the pustules of small-pox was landed on the Mexican coast. From him the disease spread with such desolation, that within a very short time, according to Robertson, three millions and a half of people were destroyed in that kingdom alone. Small-pox was introduced into Iceland in 1707, when 16,000 persons were carried off by its ravages; more than a fourth part of the whole population of the island. It reached Greenland still later, appearing there for the first time in 1733, and spreading so fatally as almost to depopulate the country.

Evidence to the same effect is furnished by the results of vaccination in some countries. In Mr. Cross's *History of a Variolous Epidemic* which occurred in Norwich in 1819, it is stated, upon good authority, that vaccination was adopted in Denmark, and made compulsory, in 1800. After the year 1808, small-pox no longer existed there, and was a thing totally unknown. Whereas during the 12 years preceding the introduction of the preventive disease, 5500 persons died of the small-pox in Copenhagen alone. Statements corroborative of this account have been made to me in the present year (1838) by Dr. Blick, an intelligent Danish physician who was on a visit to London.

Now it is a very instructive fact respecting this disease, thus rankly contagious, and arising from no other source than contagion, that when it is epidemic in any place, many instances of it occur which we can by no means trace to contagion. Dr. Gregory tells us that of the numerous cases received into the Small-pox Hospital (to which he has long been physician) not one in twenty is capable of being referred to any known source of infection; the disease being ascribed by the patient to cold, fatigue, change of air, or some other innocent circumstance. A prisoner shut up in solitary confinement in the Penitentiary at Milbank was seized with small-pox. Surely this should warn us against inferring of analogous disorders (of continued fevers for example) that they are necessarily not contagious, because we often fail to discover any way in which the poison could have been applied. If small-pox be produced by contagion alone, and yet the mode in which the contagious matter has been communicated eludes sometimes our closest scrutiny, then we must conclude that the same thing may happen in *other* contagious diseases, of which the contagious property may not be so strong or so obvious. Nay, the argument from analogy will lead us a step farther. If once a disorder of this

kind is decidedly proved to be sometimes the effect of contagion (and this I think I shall be able to prove to you of continued fever)—we cannot help entertaining a doubt whether the disorder in question really ever has any other cause. It is chiefly with a view to the light which they throw upon the obscure subject of continued fever, that I am thus anticipating some points in the history of the contagious nature of small-pox.

Again, it is noticed of small-pox—and it is the same with the other diseases in this group—that the human body is not always equally susceptible of its contagious influence. Some individuals are more readily affected by it than others: and the same individual more so at one time than at another. There are even some who seem to be incapable of taking the small-pox—just as some, who are quite as much perhaps in the way of it as their neighbours, never become infected with the great pox. Of 215 persons who had not been vaccinated, nor had the small-pox, and who were living at Norwich in the same houses with persons ill of that disease, 15 did not become affected with it; and of these 15 it was ascertained that 10 had escaped under similar circumstances of exposure before. I mentioned, on a former occasion, the fact that a certain dog, in Paris, could not be made to take the contagion of rabies.

It is not at all uncommon for persons to resist the influence of contagion at one period, and to yield to it at another, even when the exposure has appeared to be less complete. Mr. Cross gives a striking example of this. A man, who believed that he had had the small-pox, lived for twelve years as a nurse in an establishment for the reception of persons inoculated with that disorder. At the end of that time he caught the small-pox, which proved fatal to him. Now this might have been, and probably was, as the man supposed, a *second* attack. The late Mr. Lockley told me an instance still more remarkable, as being free from that ambiguity. Nearly the first patient he ever attended, if not the very first, was an old woman, who for years had been in the habit of going from village to village as a nurse; and of nursing a great number of persons labouring under small-pox, which she had never had, and against which she (naturally enough) believed herself proof. At length she was taken ill, and died of small-pox, under Mr. Lockley's observation, at the age of 84.

In many cases we can assign no reason for these variations and differences. Age seems to have something to do with them. Infants are but little susceptible of the operation of contagions. Debility, howsoever produced, certainly augments the disposition to be affected by this, as by other causes of disease. The dose and strength of the poison must also be taken into account. As some

men can drink a much larger quantity of wine (which is an alcoholic poison) than others, without being intoxicated, and are differently influenced by the same quantity at different times, so is it also with the animal poisons we are now considering; so is it, as I showed you before, with the mineral poison of mercury.

This fluctuating power to resist contagion is most conspicuous perhaps, when viewed in reference to scarlet fever. After the very earliest periods of life, children catch infectious disorders of all kinds readily enough; more readily than in mature age. The poison of scarlet fever operates with less certainty upon adults than the poisons of small-pox, or of measles. Some medical men escape scarlet fever altogether, although brought much into contact with it by their vocation. I do not know that I ever had scarlet fever.

Another fact, well worthy of notice, is, that small-pox, which is so rankly contagious, and which has at present no other source besides contagion, has its alternate periods of slumber and of activity. This metropolis, and most of our large towns, are never entirely free from it. Scattered cases occur, here and there; and when thus thinly disseminated, the disease is said to be *sporadic*. But there are seasons in which it spreads rapidly and extensively, and assumes the form of an *epidemic* distemper. We are now living (1838) in the midst of one of these epidemics of small-pox. The same is equally true of the other complaints included in this group. Sometimes they are confined to single families; sometimes they pervade a whole district.

Hence you can never infer that any febrile disorder is not contagious, merely because it prevails epidemically. Many epidemic diseases are not contagious. But the two properties may and do meet in the same malady. They are not to be set in opposition to each other, or regarded as incompatible properties, as they have been by some ingenious writers.

With respect to these epidemic visitations of the exanthemata, certain general facts have been ascertained, very useful and necessary to be known.

1. The strength of the contagion, and the severity and fatality of the disease, vary at different periods of an epidemic. In general the contagion is the most active, and the disorder the most fierce, at the outset of the epidemic. By degrees its violence slackens, and it ceases to spread. This is to be partly explained by the circumstance that the number of persons who are susceptible of the disease, and who have not yet been attacked, are fewer and fewer as the epidemic proceeds. The fire languishes for lack of fuel. But this does not seem to be all. The dis-

ease dies out before it has affected all those who are capable of receiving it. We might I think expect, prior to experience, that the earlier cases would usually be the severer; for the weak, who are less able to struggle with the complaint, and those who, by peculiarity of constitution, are most susceptible of the morbid influence, are likely to be the first to suffer.

2. There are great varieties also in the general character of the symptoms that occur in different epidemics of the same disorder. At one time, or in one place, inflammatory symptoms run high; in another place, or at another time, there is an early tendency to debility and sinking. One epidemic is more malign than another. And the practice varies accordingly: so that these are facts of the greatest importance. The prevailing character of the malady is attributed to what is called the *epidemic constitution of the season*. And when we have made out, by observation, what this epidemic constitution is, we have obtained a clue to the proper management of the disorder. Thus continued fever, as it has appeared in London during the last ten years, has required and borne far less depletion than it did for the preceding ten years or more.

You may learn from this how dangerous it is to apply indiscriminately in one epidemic the remedies that may have been found useful in another: and also how foolish and unfair it is to censure the practice employed and recommended by others, merely because it differs from that which we, in other epidemic visitations of the same disorder, have considered fitting and beneficial.

These differences in the prevalency of the disease, and in the character of its symptoms, are not to be explained by any variation in the exciting cause, which is a definite animal poison; nor can they be reasonably ascribed to any appreciable quality or agency of the weather *at the time*. They must depend upon changes that have been slowly wrought upon the human body: and those changes, constituting an acquired predisposition, are probably due to *previous* conditions of the atmosphere, which have exercised a long and gradual influence upon all the individuals of a community.

After stating, in the first clause of his definition, that the exanthemata are contagious diseases, Cullen announces, in the next place, the very curious fact, that they occur but once in a person's life. "*Semel tantum in decursu vitæ aliquem afficientes.*" In this they offer a remarkable contrast to inflammations, which, having happened once, are, for that very reason, more apt to happen again.

You will take care to observe, that it is not the mere circumstance of the disease being *contagious* that makes the difference.

Those disorders which shield the system against their own future recurrence are, all of them probably, contagious: but the converse does not hold. It is not true that all contagious disorders protect the constitution from their own return. Syphilis, purulent ophthalmia, the itch: these not only do not secure a patient from a repetition of the disease, but perhaps they even render him more liable to it in future.

Neither is the proposition absolutely and invariably true of any disease. Like most general rules, it admits of occasional exceptions. There is not one of the group enumerated in the beginning of this lecture, which has not been known to occur more than once in the same person. Small-pox has, in many instances, attacked the same individual twice; even when the first attack had been so severe as to have engraved deep traces of its visit upon the skin. There are a few instances recorded of its *third* occurrence. It was believed, at one time, that whenever the disease was thus repeated, it was *always*, in the first instance, severe, which, taken in conjunction with the repetition, was thought to indicate a strong natural susceptibility of the disorder. But it has since been noticed that the primary visit is sometimes unusually mild: and this fact (so powerful is the love of theory) has led to the supposition that the first attack was not sufficiently intense to affect the whole mass of blood, and to destroy the inborn susceptibility. I believe that the two attacks have always been separated by a considerable interval of time. I have myself known one very striking instance, about which there could be no mistake, of the recurrence of measles in several children of the same parents. This proclivity to be again affected by the specific poison seems to run in families. It is less uncommon for scarlet fever to happen a second time in the same individual. No contagious disease therefore furnishes complete future protection against itself. But that this privilege belongs, as a general rule, to small-pox, to measles, and to scarlet fever, there can be no doubt: and the validity of the rule is applicable in the order in which I have here mentioned them. It applies also, though less uniformly, to the other exanthemata. A person who has suffered a well-marked attack of continued fever is far less liable than another, according to my experience, to have that disease again. The plague is said to afford a temporary safeguard only against itself. Very few persons have it twice during the same season. The singular property we are considering is less plainly visible in erysipelas than in any other malady of the group.

The next clause in Cullen's definition

asserts the supervention of the cutaneous marks, in technical language of the *eruption*, at fixed times (*definito tempore*) after the commencement of the general fever. It is clear, therefore, that the cutaneous inflammation cannot be the cause of the fever, but is itself an effect of the contagious poison. Here again we have a mark of distinction between febrile exanthemata, and inflammatory fevers, or what Cullen calls the phlegmasiæ, in which the local inflammation commonly precedes the pyrexia.

In point of fact, the circumstance to which I have just referred shews the impropriety of ranking these diseases under the head of *cutaneous* diseases. They would more rightly be called *blood* diseases. The disseminated cutaneous inflammation is a curious and an important circumstance; and it is the symptom which, in the majority of cases, is most *distinctive* of the disorder: but it is not an essential circumstance. Thus, although there often is a manifest eruption (quite independent of common petechiæ) in the earlier stage of continued fever, a lenticular mottling, somewhat like that of measles, yet it is often absent altogether. And the very same thing happens in other diseases of the same group—diseases which all the world considers and calls cutaneous. A febrile affection, often a fatal one, but attended with no rash, proceeds sometimes from the contagion of scarlet fever. The fever—or rather the patient—is *not* scarlet. The worst form of *cynanche maligna* is of this kind. It is just the same in measles. Authors speak of morbilli sine morbillis; of scarlatina sine scarlatinâ; and even of variolæ sine variolis. Catarrhal symptoms certainly occur sometimes in weakly children who have been fully exposed to the contagion of measles; and the complaint has proved fatal, without there having been any eruption at all. So in the plague: certain cases occur in which there are no buboes nor carbuncles, yet which undoubtedly originated from the common contagion of the prevailing epidemic.

The time at which the eruption comes out differs in the different diseases; and even in the same disease it is subject to occasional variation. The rule with respect to small-pox, is, that the spots begin to be visible on the third day; that on which the sickness and fever commenced being reckoned the first. As far as I have observed, this rule is a very constant one. It has been noticed, however, that when the disease is confluent, and therefore severe, it occasionally shews itself in eruption on the second day; and when quite distinct and mild, sometimes not till the fourth.

The regular period for the outbreak of the cutaneous affection in measles is the

fourth day: it scarcely ever begins sooner; but it is often later—on the fifth or the sixth day, or even later than that.

Cullen assigns the fourth day for the ordinary appearance of the rash in scarlet fever also. But in this he is decidedly wrong. Sometimes it is, I believe, perceptible on the first day; but its most general period is the second day. In severe and unfavourable cases it may be postponed till the fourth day, or longer.

The eruption, which is tolerably constant in some varieties of continued fever, observes less regularity in the time of its arrival.

The period which intervenes between the reception of the poison, and the supervention of distinct symptoms—the period during which the poison, though doubtless at work, seems to lie dormant in the system—the period (in one word) of *incubation*, differs also in the different diseases of this group, and varies even in different cases of the same disease. Although no marked changes occur during this period, I believe that some slight deviation from the usual condition and feelings of the patient might often be observed, if they were expected and looked for.

The period of incubation in continued fever is very uncertain. In a paper upon this curious subject, published in the ninth volume of the *MEDICAL GAZETTE*, Dr. Gregory states it as his opinion, derived from much inquiry, that ten days is the *average* period. Dr. Haygarth reckoned the minimum period at seven; the maximum at seventy-two days. Sir William Burnett, in his *Account of a Contagious Fever at Chatham*, gives the history of a party of men belonging to the St. George, lying at Spithead, who were sent, on the 3d of January, 1811, to assist in navigating the Dolphin troop-ship; the crew of which were affected with typhus fever. On the 10th (seven days after exposure) fourteen of these men were sent to the Hospital-ship from the St. George, ill with the fever; and many subsequently, up to the 21st of January (the eighteenth from exposure), after which period no cases occurred.

The period of dormancy is more definite, yet still liable to some variation, in most of the other exanthemata. "At the Small Pox Hospital," says Dr. Gregory, "abundant evidence has been afforded that the period of incubation is usually about twelve days." It is a remarkable fact that, "when the small-pox is received into the system by inoculation, seven days only elapse between the insertion of the virus and the establishment of the fever."

Dr. Bateman puts the period of incubation in measles at "from ten to fifteen days." I have known several instances in which the date of a single short exposure was exactly

ascertained, and in which the disease commenced precisely a fortnight afterwards. In scarlet fever the average period is shorter; not more than from four to six days. In the plague it is, I believe, more variable; but generally not exceeding a few days.

To say that a febrile disorder is contagious, is the same thing as to say that it is produced by an *animal* poison. Now there are many poisons, very deadly poisons too, which cause diseases that are not communicable from person to person. That particular poison the *malaria* is of this kind.

Of the inorganic poisons some are taken into the blood, and emerge again from the body, unaltered, with one or more of the ordinary secretions; chiefly with the urine. They may induce changes in the body as they pass; and if these changes be salutary, the substances so inducing them become medicaments. If the changes be destructive or injurious, they are strictly poisons.

Other of the inorganic poisonous substances do not find so ready an exit from the body. They enter into permanent chemical union with the constituent tissues of particular organs. In this way, to use the words of Liebig, they deprive the organs of the principal property which appertains to their vital condition, viz. that of suffering and of effecting transformations. If the organs of which the functions are thus destroyed be vital organs, these poisons are fatal.

But the animal poisons, those at least with which we are now concerned, act in a totally different manner. They effect changes in the blood, whereby they are themselves abundantly multiplied or reproduced; and the eruptive disease that ensues seems to be the mode provided by nature for the escape or the expulsion of this newly-formed morbid matter from the system. This is the old-fashioned humoral pathology; founded on bold, unproven speculation: and it is most curious to see these very doctrines, which had sunk into universal discredit and contempt, now again assuming their places, as scientific truths, upon the secure basis of organic chemistry. A wonderful specimen this of the sagacity of the older physicians—of the despised wisdom of our forefathers.

The ancients attributed various disorders to a fermentation of the animal fluids. The cause of fever, according to Hippocrates, was some morbid matter in the blood. This matter, by a process of concoction, was brought, in a certain number of days, into a state in which it was ready for expulsion from the body. It was then thrown off by hæmorrhage, by sweat, by alvine discharges; or deposited upon the surface in the form of abscess, or cutaneous eruption; and these



eruptions or evacuations constituted the crisis of each fever.

The doctrine thus enunciated by the father of physic is very nearly the same with that which Liebig is teaching in the 19th century. This distinguished chemist ascribes the phenomena which succeed the introduction of certain animal poisons into the blood, to a process exactly resembling fermentation. Let me try, in a few sentences, to expound to you his views on this deeply interesting subject.

You know that the brewer excites the fermentation of his *sweet-wort*, by adding to it a small quantity of *yeast*. Wort is an infusion of malt, and contains sugar and gluten, with other vegetable matters, in solution. Yeast is putrefying gluten; and its component particles are, therefore, in a state of intestine motion or transposition. When placed in contact with sugar in solution, it has the property of communicating a similar intestine motion to the elements of the sugar, whereby they arrange themselves into new and simpler forms; namely, into alcohol and carbonic acid. If there were no gluten in the wort, this would be the whole of the process: during which the added yeast disappears.

But the decomposition or *fermentation* of the sugar reacts upon the gluten in the wort, and converts it gradually into yeast, which, mingling with the liberated carbonic acid, rises and floats upon the surface of the fermenting liquid. So that, when the process is completed, there has been produced thirty times as much yeast as was originally added to the wort.

Now this is but a type of what happens in other fluids under analogous circumstances: and it may be laid down as an abstract proposition in Liebig's, or rather his translator's words, that "a substance in the act of decomposition, added to a mixed fluid in which its constituents are contained, can reproduce itself in that fluid, exactly in the same manner as new yeast is produced when yeast is added to liquids containing gluten."

Thus the virus of small-pox (which virus is formed out of the blood) causes such a change in the blood as gives rise to the reproduction of the poison from the constituents of that fluid: and whilst this process is going on, the natural working of the animal economy is disturbed: the person is ill. The transformation is not arrested until all the particles of the blood which are susceptible of the decomposition have undergone the metamorphosis.

Liebig shews that similar processes may take place in mixed fluids (and, therefore, in the blood) without the regeneration of the added substance: just as the fermentation of a solution of sugar is effected by the addition of yeast, without any reproduction of the

yeast, if there be no gluten in the saccharine solution. In such cases, the disease, which accompanies or results from the transformations that occur in the blood, is not contagious: the poison is not renewed. It is, thus, apparently, that certain *miasms* produce disorders which are not communicable from person to person.

In order that a specific animal poison should effect its own reproduction in the blood, and excite that commotion in the system which results from the formation and expulsion of the new virus, it is requisite that a certain ingredient (analogous to the gluten in the brewer's sweetwort) should be present in the blood: and this ingredient must have a definite relation to the given poison.

If this ingredient be indispensably necessary to life, the poison, which transforms and destroys it, is inevitably a fatal poison. May not this be the *modus operandi* of the poison of hydrophobia?

Again, if this ingredient be wanting, no reproduction of the poison takes place; nor, of course, any of those symptoms which are consequent upon such reproduction. The poisonous qualities of the animal substance are not developed. It ceases to be a poison.

And this ingredient, if naturally present, is exhausted and destroyed, for a while at least, by the operation of the poison. Hence, for a while at least, the same disease cannot be again produced by the agency of that poison.

Supposing the ingredient to be one which is not essential to the composition of the blood, and to have been thus destroyed or exhausted, it may never be replaced. Or it may be replaced only after a long interval. In some persons it may never exist at all; or it may exist at certain periods only of their lives. It may even be acquired by unnatural or peculiar modes of living.

All this is not only very possible, but probable. A certain number of peculiar substances do certainly exist in the blood of some men which are absent from the blood of others. In childhood and in youth the blood of the same individual contains variable quantities of substances, which are not to be found in it at other periods of life.

This theory of Liebig's offers, then, a reasonable explanation—the only explanation, indeed, that I have ever met with—of the curious facts, that certain contagious disorders furnish a protection, temporary or permanent, against their own return; that they have a tolerably definite period of incubation, and run, for the most part, a determinate course; that some persons are less susceptible than others of the influence of these animal poisons, or not susceptible at all; and that the same individual may be capable of taking a contagious disease at one time, and not at another.



Moreover, the light supplied by this theory gives distinctness to our conceptions respecting certain deviations from the regular course and type of these diseases; which deviations are not uncommon.

Thus the symptoms which precede and usher in the eruption are sometimes slow, halting, and irregular in their progress; appear, and then recede, and reappear, so that we are in doubt what is about to happen, until at length the disease declares itself in its decided and authentic form.

We may suppose this to depend upon some tardiness or interruption of the process, whereby the virus is (to use the ancient term) concocted.

Again, the series or combination of symptoms that mark the specific disease is sometimes, as I stated before, *incomplete*. We have the eruption of measles without the catarrhal symptoms; the sore throat without the rash, of scarlet fever. And experience has found that, where the malady is thus imperfectly developed, the protection it confers against its own recurrence is also incomplete. To explain this double failure we may reasonably infer a corresponding defect in the series of changes which the poison tends to produce in the mass of the blood.

Glandular enlargements and chronic abscesses are frequent *sequelæ* of these exanthematous disorders. They may be considered to represent the dregs of the reproduced virus, which has been imperfectly eliminated from the system by the usual channels.

The subtle contaminating effluvia which proceed from the bodies of the sick enter the blood of those who catch the disorder, chiefly, I imagine, by being inhaled into their lungs in breathing. The poison may, perhaps, be capable of being spontaneously absorbed through the skin: and upon this supposition oil has been smeared over the surface with the view of shutting out the contagion of the plague. The virus may gain direct entrance into the blood; we know that it does so, for we ourselves insert it, in inoculation of the small-pox. Dr. Francis Home succeeded in imparting measles by engrafting some blood of a person ill of that complaint; but subsequent attempts to excite the disease in that way have failed. Some rash and unfortunate trials have proved that the plague is communicable by inoculation with matter from the buboes.

Attempts have been made to estimate the distance to which the influence of different contagious emanations extends. The effluvia in small-pox, measles, and scarlet fever, are the most active; operate, *i. e.*, at the greatest distance. In continued fever they have a less range; and in the plague the diameter of the infectious circle is probably very small.

Some have even supposed that the plague is communicable only by actual contact; but the opposite opinion seems the more likely, namely that you may *touch* plague patients with impunity (as Bonaparte is known to have done on a memorable occasion) if you avoid inhaling their breath, or the effluvia proceeding from their bodies.

The most important practical result of the experiments made by Dr. Haygarth and others, for determining the absolute distances to which the power of the contagion extends in different disorders, was, that *where ventilation is complete*, in other words where the gaseous poison is freely diluted with atmospheric air, the sphere of its operation is very limited.

It is an interesting subject of inquiry, worth glancing at for a moment, how far the power of different contagions is modified by differences of temperature. Small-pox is readily propagated either in hot or in cold regions; in Mexico near the equator, in Greenland towards the pole. The plague does not spread when the temperature is below 60° or above 90° Fahrenheit. The vaccine matter loses its property of producing the cow-pox if it be exposed for a certain time to extreme cold, or to a heat of 95°. Typhus fever, measles, and scarlet fever, are said to be of extremely rare occurrence in the intertropical regions. Dr. Henry has turned these facts to useful account by proposing to decompose and destroy certain contagions lurking in fomites by the operation of artificial heat.

Having thus pointed out many circumstances of interest, which are common to all, or nearly all, the diseases grouped together under the title of exanthemata, I may now proceed to a more particular account of those diseases in succession. And I shall begin with *continued fever*; because, although it does not afford the best-marked example of the collection of symptoms that compose Cullen's definition of the order, yet a right understanding of the practical points concerned in the management of this febrile disease will assist us materially towards a just conception of the modifications of treatment that may be required by the rest.

We hear continually, both in and out of the profession, different species of fever spoken of. By the public, typhus fever, brain fever, bilious, putrid, low, nervous. And systematic writers are to the full as particular: mucous fever, ataxic, adynamic, gastro-enteritic, and so forth. Now admitting that fever shows itself under various forms, I am persuaded that the effect upon the mind of all this subdivision is bad and hurtful. It encourages a disposition, already too prevalent, to prescribe for a disease according to its name. There is no line of

genuine distinction between continued fevers, that can be relied on. They run insensibly into each other, even the most dissimilar of them; and are traceable often to the same contagion. I shall in the first place, therefore, attempt to describe this disease of continued fever as it occurs in its most ordinary and simple form; and then point out its principal *varieties*.

Continued fever does not always commence in the same way. It often happens, that for several days before the disease assumes its distinct and proper aspect, and before the patient is rendered unable to pursue his usual occupations, he is affected with certain morbid symptoms, which may be considered premonitory of the fever; so that it is sometimes difficult to mark the precise beginning of the disease. These preliminary symptoms result apparently from an altered condition of the *nervous system*. The poison in the blood disturbs the functions of animal life before it causes any palpable derangement in the mechanism of the circulation. The expression of the patient's countenance alters; he becomes pale, languid, and abstracted. Those about him observe that he is looking very ill. He is feeble, and easily tired; reluctant to make any exertion of mind or body; listless, and apprehensive often of some impending evil. He loses his appetite; his tongue becomes white and inclined to tremble; the bowels are irregular, often confined, sometimes affected with diarrhoea; his senses lose their natural delicacy. He has uneasiness or wandering pains in various parts of the body; and occasionally there is some giddiness: drowsiness, perhaps, during the day, and unsound and unrefreshing sleep at night. To collect all this into one expressive word, the patient evidently *droops*.

In other cases these preliminary movements are altogether wanting. Chomel gives the following comparative account, deduced from the exact observation of 112 patients in this particular: in 73 of these cases the invasion of the disease was sudden, without any warning, in the midst of apparent good health. In 39 there were prelusive circumstances.

The regular onset of the fever is, very frequently indeed, marked by a *shivering fit*. Another common phenomenon at the period of the invasion is *severe headache*; pain or aching across the forehead. According to Chomel, the headache is usually first experienced by the patient when he gets up in the morning. But this certainly is not a constant symptom. There is sometimes a sense of heaviness and vertigo rather than headache. Another symptom which sometimes, but not so often, sets in with the fever, is *diarrhoea*; and this is an im-

portant circumstance when it does occur. It is attended, perhaps, with pain or uneasiness in the abdomen. You will also perceive, even when there have been no premonitory circumstances, that symptoms arise, even thus early, which belong to the nervous system, and denote some disturbance and alteration in the functions of sensation, thought, and voluntary motion. They are comprised under the general phrase, "*febrile oppression*," and they are different from what we notice when pyrexia supervenes upon inflammation. You will obtain a clearer notion of what this term, febrile oppression, means, by watching at the bedside of *one* patient in this disease, than by any description I can give you. There is great inaptitude for exertion of the power of thought, or of motion. The expression of the face is dull and heavy, absent, puzzled. The patient presents very much the appearance of a person made stupid by drink: and he staggers a little if he attempts to walk. The muscular power is sensibly enfeebled: sometimes the patient will struggle against this; but in a few hours, or in a day or two at farthest, he takes to his bed.

These are the symptoms which mark the outset of the disease we are about to consider. They occur sometimes in other disorders of the class in which I have placed continued fever. In the plague, for example. The patients appear like people who are drunk. Now these symptoms result, no doubt, from changes which are going on in the blood, and which make an early and a strong impression upon the nervous system. And there is another circumstance which, when it is observable, denotes a depressed state of the nervous power. Practitioners, sometimes, are in doubt whether the case may not be one of some visceral inflammation: or, perhaps, knowing it to be continued fever, they still think it expedient to *bleed* the patient. Now faintness or actual syncope is much more easily produced by the abstraction of blood, in *continued fever*, than it is in *inflammation*: and this fact may occasionally be the means of distinguishing between incipient continued fever, attended, for instance, with catarrhal symptoms, and pure incipient pneumonia.

In order the more clearly to describe the course of continued fever, I shall divide it, as others have done, into periods; weekly periods. Not that there is any such period of seven days allotted to particular symptoms; but that in the simplest forms of the disease, when it runs its course most evenly and favourably, and therefore, we may suppose, the most *regularly* also, there is a succession of different *sets* of symptoms, which occupy each *about* that space of time; nearly enough to allow of my taking it, I

say, as a help to the better *describing* the disease.

Many of the symptoms which occur during the first stage of the disorder—during the first week, we will say—are such as belong to the sanguiferous system. The pulse becomes more frequent than in health, there is increased heat of skin, and thirst; headache, and throbbing of the temples. The pulse varies considerably in different cases. Generally, I say, its frequency augments; but sometimes it is even slower than natural. The acceleration of the pulse is greatest (*cæteris paribus*) in those constitutions which are the most irritable. In young persons, in females, and in weak or delicate males, it will often rise, soon, to 120: while in stronger adults, it does not so early attain its maximum of frequency, and perhaps does not exceed 100 throughout the whole course of the disease. Should the pulse in any instance reach 130 or 140, the disease is severe: and the majority of such patients die. The absolute frequency of the pulse is not, however, of so much importance in this disorder, as its steadiness. If it shifts from one number to another, *that* affords a worse prognostic even than its being very frequent; provided it keeps at the same standard. The skin, during this period, is generally hot and dry, and it *feels* to a bystander very hot and *pungent*. The actual heat, however, is not so great as the sensation given to the hand might persuade us it was. Dr. Bateman found that, in a majority of the cases treated by him, the heat, as ascertained by the thermometer, was about 100°; and he never observed it higher than 104°. The thirst is usually troublesome for the first few days. The tongue becomes clammy or dry; sometimes it is clean and smooth; more often furred; its edges and tip will, perhaps, be red, then a white fur will begin, which either covers the central part of the tongue, or is divided by a straight brown streak which occupies its middle portion. This brown streak is the first step to dryness and blackness of the tongue.

During the same period a careful examination of the abdomen will detect indications of diseased action *there*. Sometimes diarrhoea is an early symptom; generally it is postponed, I think, to the next period; or to the latter part of the first. When it does occur, the stools are, for the most part, loose and frequent; and either of a dark colour and foetid, or of a yellow-ochre appearance, like pea-soup somewhat. If you make pressure upon the abdomen, you will find it unnaturally hard and resisting, as though its walls were made of pasteboard; slightly tympanitic, as you learn by making percussaion. Frequently, uneasiness is mani-

festated when pressure is made on the belly, particularly over the coecal region; and Chomel remarks that another symptom, not commonly met with in other diseases, is usually noticeable in the first stage of this, viz., a little gurgling sound, evidently from an admixture of liquid and of gas in the bowel, which sound or sensation becomes audible, or palpable to the hand, upon pressing the same region. This symptom is still more common in the more advanced stages of the disorder.

There is evidence, frequently, of a slight affection of the membrane of the air-passages, from nearly the first: some notable quickness of respiration, and some diffused rhonchus and sibilus, audible through the stethoscope.

And among all the indications of increased action in the circulatory system, the symptoms that relate to the nervous centres remain perceptible. The aspect of the patient is peculiar: the features fixed and inexpressive; or expressive merely of apathy and indifference. If he is spoken to briskly, he responds; and although his sensibility seems blunted, his answers are, as yet, rational, and to the purpose. Delirium does not come on, in general, till towards the end of the first week. The muscular power is greatly depressed. The patient lies on his back, motionless; he sleeps but little, waking often; and the short snatches of repose which he seems to get, are disturbed, apparently, by uneasy dreams: and he *fancies*, and says, perhaps, that he does not sleep at all. Sometimes, even during the first stage of the disorder, when the bowels are relaxed, the prostration of strength is so great, or the tendency to stupor and indifference is so marked, that the stools are passed under him as he lies in bed, without any apparent endeavour on the part of the patient to prevent it; and without any notice of his wants being made to his nurse. The urine, during the same stage, is scanty, and high-coloured, and ill-smelling often. Towards the very end of the first weekly period, the eruption which is peculiar to continued fever sometimes begins to show itself: but this is commonly postponed to the next stage; and I shall describe it in connexion with the other symptoms that are apt to occur in the second week of the disorder.

It is seldom, except in very malignant forms of continued fever, that death takes place during its primary stage. Of 42 cases treated by Chomel, one alone was fatal in that period.

CLINICAL OBSERVATIONS  
ON  
DISEASES OF THE SKIN.

By BENJAMIN PHILLIPS, F.R.S.  
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As I have not, at this moment, the means of illustrating the first order of cutaneous disease—the exanthemata—I shall avail myself of the privilege I claimed in my last lecture, and proceed with the second.

Vesicular diseases have for their anatomical element an elevation of the epidermis; that elevation may be produced by a serous, a sero-purulent, or sanguinolent fluid. The arrangement of these vesicles, their mode of development, and their dimensions, have served for the distinction into species.

The large hemispheric flattened vesicle often contains a reddish, sometimes a yellowish serous fluid: it is seated on a more or less intensely inflamed spot of epidermis: they are usually few in number, and widely separated from each other. When they break, which they usually do in a few days, brownish crusts of varying thickness follow: these crusts assume more or less of a conical form; and when they come away, they often leave behind them a slightly ulcerated surface, to which succeeds an indelible and somewhat discoloured cicatrix: this is *rupia*, a species which I have no means of proceeding farther with at present.

*Eczema*.—Instead of those large vesicles, constituting a particular and well marked species, we may find them, as in the case before us, very small, irregularly crowded together, and developed on a surface which, when the disease is acute, is very red; when it is chronic the redness is often much less intense. These vesicles sometimes dry up, and desquamation of the cuticle follows; or they may quickly burst, and the yellowish or reddish serum they contain exudes from many points, dries up, and often forms a scaly surface. This state of things is often accompanied by intense redness, by a stinging sensation, and by intolerable itching. But, as in the case before you, the intense symptoms may be mitigated, and the disease may persist in a chronic form, and become extremely obstinate and very difficult to treat. The cuticle then is much thinned by repeated exfoliation; it is traversed by little cracks or fissures, from which a reddish serum exudes, and concretes upon the surface. In this state of things, when the body is warm, the itching is intolerable.

This disease, *eczema*, so characterized, may be caused, or at least much aggravated, by external causes. Not long ago we had a patient, a youngish woman, who had a large patch of *eczema* on one leg; to this, when in an irritable state, a lotion of sulphuret of potash was applied,

and it rapidly extended over the whole body when her sufferings became so great as to produce severe gastric disturbance, sleeplessness, and delirium. Milk diet, tepid bathing, sedatives, and protecting the surface with pledgets covered with the ung. plumbi comp. with or without opium, very soon improved her condition, but the tendency to desquamation continued for a long time. We very often see the disease produced by gastric disturbance. I recollect a young woman, who had previously been a patient in this house with psoriasis, which took some months to cure. Soon after her discharge she got an affection of the mucous membrane of the nose, accompanied by a profuse yellowish offensive secretion, which, after the failure of many remedies, yielded to injections of chloride of lime. But no sooner did it yield than she got an attack of *eczema*. I got a patient not long since, in whom the disease was developed as a consequence of the exclusive use of highly-seasoned food, which had no doubt acted upon the blood, modifying its constitution; for although the disease affected only his legs, he had a pricking sensation over the whole body; and it rapidly improved under a change of diet. Nothing is much more frequent than the occurrence of eruptions on the legs of females, when the menstrual function becomes interrupted, at what is called the critical period of life. This is often described as *erysipelas*. I lately saw a lady in whom this function ceased with considerable disturbance. A vicarious action was set up by the intestines, and a pint of blood would often pass by stool. She struck her leg; and the injury was followed by carbuncular boils; and, as they got well, *eczema* was manifested. Stricture of the urethra is not unfrequently accompanied by an *eczematous* condition of the prepuce; and last year you saw a man in whom disease of the rectum was accompanied by *eczema* of the margin of the anus, the inside of the thighs, and the scrotum. You see, then, that in adults external irritation may produce *eczema*; but you see also that disease in the stomach, the intestines, the uterus, or the urethra, may excite the development of it also; you see further, too, how necessary it is to examine carefully into the condition of internal organs, or you may find yourself foiled in any plan of treatment you may adopt.

It is not, however, in adults that we most commonly see *eczema* developed: children are the most frequent sufferers; and usually it is developed in them either on the face or the scalp. The period of the first or the second dentition is that in which it is commonly observed. I apprehend there can be no question that the irritation of dentition is the exciting cause; that irritation produces what is called a de-



termination of blood towards those regions, and accounts for its being generally confined to the head and face. There is yet another mode by which it is alleged by Bielt that eczema may be produced—by contact of a sound with a diseased part in the same or in different individuals. The former I am inclined to think I have seen myself; the latter Bielt said he had known to occur from coitus: Baumes testifies to similar facts; and yet, in the ordinary acceptance of the term, it is not a contagious disease.

Bateman described four varieties of eczema. One of the forms, supposed to be caused by the irritation of the sun's rays, he called *solare*; another, which seemed to hold a midway between impetigo and eczema, was called eczema impetiginodes; a third, in which the inflammatory action was intense, was called eczema rubrum; the fourth, in which matters took a simple, straightforward course, not being caused by the sun's rays, nor accompanied by intense redness: this was eczema simplex. Now because I think these minutiae are calculated to confuse you, while they are of no practical use—as I know one may so constantly run into another—as I know also that all may exist in the same region at the same time—as I know also, by an excess of refinement, each of those four varieties may be divided into twice or even ten times as many more, depending upon the disposition of the vesicles, the degree of redness, the quantity of inflammation, the space they occupy, the surfaces they affect—I propose to remove some of this confusion, by describing the disease simply as acute and chronic.

Eczema very commonly gives no indications of its approach; the patient has generally scratched the spot many times before his attention has been directed to ascertain whether there be any cause for the uneasiness or not, and in simple cases the affection may even then be overlooked. There may be very little change in the colour of the skin, and the minute vesicles may escape unperceived. A careful examination will, however, discover a number of very minute transparent vesicles irregularly arranged; the little fluid they contain is soon absorbed, they shrivel, and the cuticle exfoliates; successive eruptions take place, and the disease in that simple form does not commonly last more than three weeks. I have known eczema in this form to cover large portions of the body, but usually it is restricted to small spaces, between two fingers for instance, and very generally it is in women that we observe it. Cooks, and people whose hands are a good deal exposed to the action of the fire, are the principal sufferers, but it is often observed in lying-in women. I was asked to see such a case not long since; it occurred on the second joint of the index

finger of the left hand. An ordinary lady's remedy for all eruptive diseases was applied. Goulard's lotion, under the influence of which it quickly spread over the whole hand.

In our itch wards, this variety of eczema very often complicates scabies; and I believe it is, in most of these cases, produced by the irritation which sulphur ointment causes upon the delicate skin of children. But instead of the mild form I have described, this disease may present great acuteness; the heat is then great, burning or stinging, the redness fiery, and the surface studded with small silvery points; the vesicles are larger than in the mild form, and they are often surrounded with an inflammatory circle. A week will pass before the symptoms are much abated, and exfoliation is presented; but instead of abating, the symptoms may be aggravated, the vesicles may become confluent; they break, the acrid fluid they contain escapes over the diseased surface, increases the irritations, and sometimes excoriates the part; and a yellow gummy exudation covers the surface. This condition is what is termed eczema rubrum; and in the boy before you there are several points where this form is presented. Others you see in which the affection is still more acute. Some of you saw, some months ago, a poor woman whose body was entirely covered with eczema, and you recollect it exhibited all shades of intensity: in fact, she presented simplex, rubrum, impetiginoid, acute, and chronic, at the same moment; and this is not very unusual. In the impetiginoid form, the inflammatory action is so active, that at some points vesicles are not discovered at all; they are so short lived, coalesce, are filled so soon with a yellowish sero-purulent fluid, and take the form of irregular pustules filled with a sero-purulent fluid. The fluid is soon poured out, and a yellow gummy concretion follows. After a time, this comes away, and leaves an exuding surface after it: the exudation forms new crusts, and so it goes on, while the inflammatory action abates when the skin begins to assume a more natural appearance. In the case of the woman to whose case I have before alluded, the constitutional disturbance was great, the restlessness extreme, and towards night delirium came on; and when the surface affected is large, febrile excitement is an ordinary feature of the disease.

I have already stated that some persons entertain considerable doubts whether it is wise to endeavour to cut short a skin affection by external treatment, and whether or not there be danger of "driving it in" upon some more important organ; and this question has been often raised about eczema. As a general principle I am not prepared to say that I have known any such serious effects to follow the proper external treat-



ment of a skin disease; but there are cases in which I have seen mischief follow the employment of the treatment by repercussion; and I would advise you always to observe the state of internal organs before you adopt any particular plan of treatment. The only circumstance under which I feel an unwillingness to cause the disappearance of eczema, is when it occurs during the period of dentition. You will occasionally find, during the first dentition, not only the head and face, but the whole body, of a child covered with eczema. In some of these cases, the disease may distress the child, but in most cases the mother is the principal sufferer. Her vanity is commonly wounded by the hideous crust which covers the countenance of her child; but the child very often presents, in other respects, a most thriving appearance. In these cases, I generally counsel the hair to be cut close with a scissors, ablutions with tepid milk and water, and bread and water poultice; and by these means matters may be kept in a quiet state. If you go beyond this, and succeed in dissipating the eruption before the irritation of dentition has passed away, your services are very likely to be required to treat some convulsive attack or obstinate diarrhoea. The eczema, in these cases, seems to be a safety-valve by means of which those two enemies are kept at bay, while the functions of nutrition are generally perfectly well performed, provided the circumstances I have pointed out as to ablution are attended to; and when the irritation of teething has passed away, the disease is quite manageable, rapidly gives way to simple treatment, and the hideous mask which produced so much annoyance comes away and leaves no scars behind it.

There are two periods of life when we are most commonly called upon to treat eczema; in childhood, and in the decline of life. I do not mean to say that it is not presented at other periods, but that it is more frequently seen, and more obstinate, at those times.

If judiciously treated, these acute forms of the disease may give way, and be entirely dissipated in three or four weeks; especially when the patient is otherwise in good health; but if the patient be debilitated by age or disease, our means of cutting short the attack are very limited, and too often it degenerates into a chronic form.

*Chronic Eczema.*—Of all the diseases of the skin, there are, perhaps, none more frequent, after twenty, than eczema; and when it assumes the chronic form there is probably none more obstinate and distressing.

Usually the chronic disease succeeds to a somewhat acute attack: I say *somewhat* acute, merely to express that the disease, after fifty, rarely presents the same intensity as at an

earlier period of life. The character of the disease, and generally the condition of the patient, forbid the use of very active remedies: the patient himself is not over careful, and the disease drags on, and does not create much uneasiness in his mind, until the itching and swelling show what a firm hold it has got. This state of things is not uncommon at what is termed the critical period of woman's life, and then it is apt to appear about the thighs and legs, from which, by dint of scratching and improper remedies, it may soon extend in all directions. A gentleman, now present, some weeks ago asked me to see a patient on whose thigh there was a large patch of chronic eczema, excited by menstrual irregularity; the patch was obstinate, and was likely to terminate the professional connection of my friend and his patient. I advised the use of means which we shall presently indicate, under which she got well in three or four weeks. This affection is very commonly known among the unlearned as erysipelas. I have very recently been consulted upon the cases of three gentlemen, neither of whom was much under 70; in each case, the whole of both lower extremities was affected, and beyond this it extended, more or less, towards the loins, and also affected the arms slightly. In such cases, it commonly happens that for a time a silk or gauze stocking is worn next the flesh to prevent friction and irritation; sometimes muslin is interposed; in a few cases some ointment is spread thickly over the muslin, or lint. None of these things are found to be a sufficient protection. The vesicles burst, the fluid escapes, and glues the stocking, or muslin, to the part; and when it is taken off, the small portions of raised cuticle come off with it, and a large number of small red exuding points are presented. Ultimately, by this course of proceeding, the points become so numerous that the part appears completely raw. The irritation then is very great; as soon as the patient gets warm in bed the itching becomes so intense as to oblige him to get up, and this happens, often, several times in a night. As might naturally be supposed, the health suffers, and where it happens in a very broken constitution, the irritation is sometimes more than the patient can bear; the stomach gives way, and the patient cannot rally. I was consulted not many weeks ago in the case of a man upwards of seventy years of age—well known in the literary world, much given to the pleasures of the table—who died in this way. This state of things will sometimes go on for months; and sometimes the exudation is so copious, that it is necessary to renew the dressings several times in the day. Under proper treatment the redness becomes less intense, the exudation less copious, thin scales are

formed over the surface, and the patient seems to be getting well, when suddenly, under the influence of some imprudence in diet, or walking, the redness and exudation increase, and, in two or three days, matters are as bad as ever. In these cases the disease may last for months, or even years. Then the limb is very apt to become oedematous, and a numbing sensation is not at all uncommon. Even when the case is doing well, when no more vesicles are developed, the exfoliation of the epidermis will persist with great obstinacy, and the new tender cuticle is traversed by innumerable small fissures, or cracks, from which there is sometimes a slight exudation. Probably the thing which the patient finds it most difficult, if not impossible, to bear, is the itching, which is so intolerable that, sooner or later, his patience almost always gives way, and a good tearing of the part is the result. You will see persons, so suffering, constantly passing the fingers over the part, or rubbing one leg against the other, although they know how much they aggravate the disease by it.

It is by no means unfrequent to find diseases of the mucous membranes exciting eczema in the neighbourhood of the natural openings of the body, particularly the prepuce and the anus; and in the latter case, extending, as it sometimes does, over the scrotum and inside of the thighs, the suffering is often very great.

I have never myself seen any circumstance which would justify me in telling you that eczema is a contagious disease. I have, on two occasions, fancied that it had been communicated by contact from one buttock to the other, in a case of diseased rectum; but it is possible the disease was developed under the same irritation on one side as the other. Biett says he has known it to occur from contact during coitus; and Baumes says he has seen examples of the same kind.

*Diagnosis.*—There is no disease of the skin which is more likely to be mistaken for others than eczema. On the one hand, while the vesicle is intact, it may be mistaken for scabies; on the other, it may be mistaken for miliaria; whilst, under other aspects, it may assume the form of impetigo, of lichen, and of psoriasis. When, in its simple form, it is seated between the fingers, and at the flexure of the wrist, the resemblance to scabies is so strong, that a mistake by a superficial observer is excusable: but the flattened vesicles, their confused crowding, and the stinging or tingling sensation they occasion, are so different from the small number of acuminate vesicles—the rather pleasant itching and contagious character of scabies—that a careful observer can hardly be at a loss to make the distinction. Then, again, in miliaria the vesicles are never confluent;

they are larger; and there is a certain amount of constitutional disturbance. Under ordinary circumstances there is no danger of confounding eczema with impetigo; but there is a neutral ground, where one appears to run into the other, in eczema impetiginodes; and then the distinction is often difficult: still even then it can be done. The pustules of impetigo never contain serum; the vesicles of eczema never contain true pus, but a sero-purulent fluid; and in the first period of their existence, only serum. Again, there is a still more marked difference—the vesicle of eczema is never followed by an ordinary rough scab, but by large gummy concretions. Lichen agrius may be confounded with chronic eczema; there is a similar cracked surface; there is a similar exudation of fluid; there is a somewhat similar scaly concretion; but, then, the exudation is only from the cracks; in lichen, the skin is much thickened and indurated, and papulae can always be discovered. I shewed you a case where eczema was likely to be mistaken for psoriasis. It occupied the scrotum, and several parts of the body: but I called your attention to two features—the almost constant presence of vesicles in a case of eczema, and a certain exudation. Neither of these things happens in psoriasis.

I have already stated that the period of life, and the general health, must be taken into account in estimating the gravity of this disease. In a young child, it is an extremely unsightly, but often a salutary, evil. In adult life, it may be very troublesome, and very obstinate: but in persons broken by age, or by infirmity, it may be much more serious. The irritation may then be so distressing as to interfere with the performance of more important functions, and thus wear him out.

*Treatment.*—As this disease is often the consequence of derangement of an important organ, the state of the stomach, the bowels, the uterus, and other organs, should be carefully noted, and their functions, if possible, restored to a healthy state; and this will often make the particular treatment easy. In very slight cases, the Inf. Rosæ Comp. with small doses of saline aperients, will soon relieve the patient from the annoyance; but although these, with rest for the part, will do much, they will often fail. It may become necessary to use a restricted diet—in some cases, even to take blood generally and locally—when the patient is in full health, and the pulse excited; but, in many cases, a few leeches applied in the vicinity of the part affected will do much to blanch a very red surface. In this form of disease the local application must be of the mildest kind. You have before you a case where the heroic, or double-or-quits plan was pursued: a strong solution of lunar caustic

was applied to both cheeks : the eczema is, as you see, cured ; but the boy's cheeks are as rough as shagreen ; and when this hob-nail appearance will be dissipated, I cannot pretend to say. Energetic local stimulants may sometimes be proper in chronic, but I think never in acute, eczema. I have, when there has been great irritation at the part, tried alkaline lotions, and, in some cases, with good effect ; but often without ; and if the bath be used, care must be taken always that the temperature do not exceed 80° ; for although a higher temperature will give more immediate relief, a period of increased irritation will soon follow. When the surface is much denuded, the blandest mucilaginous applications should be made. In this state, a poultice, made with decoction of mallow and potato fecula, is very soothing. This plan of treatment, prudently followed out, will often cut short a smart attack of eczema in ten days or a fortnight.

When, from imprudent treatment, constitutional peculiarity, or doing nothing, the acute symptoms have abated, they too often give place to the chronic form ; and, among the curable forms of skin disease, there is none more obstinate than this. In some mild cases of no long standing, the mineral acids, sulphuric or nitric, taken in barley water, to the extent of a drachm or more of the dilute form daily, often succeeds, especially when the exudation from the surface is considerable. It is necessary to give it in some such vehicle to protect the stomach, which is sometimes a good deal troubled by the acid given in a wine-glass of water ; but even here the Inf. Rosæ Comp. with sulphate of soda or magnesia, and mucilaginous sedatives externally, answer best. If the affection resists those simple means, and it often will, other means must be resorted to. Supposing it to affect a considerable surface, the lower limbs, for instance, of a person over fifty—the pruritus is distressing, and prevents the patient sleeping, the serous exudation is considerable, and the limbs are swelled—first I take care that the legs are kept up as far as possible. I order sometimes a tepid mucilaginous bath to soothe the parts, sometimes a cold diacetate of lead or carbonate of potash lotion, the latter when the itching is very troublesome : but in many cases cold is not well borne ; it produces shivering and other discomfort. As soon as practicable I apply strips of linen covered with the Ung. Plumbi Comp. I have them sustained equably by a roller, and I leave them on until the exudation makes it necessary to remove them. I follow this plan because that application is a soothing one, because the parts are not too frequently exposed, and because the support of a roller, well applied, has a very beneficial influence on the disease. In other

cases I have used equal parts of diachylon and soap cerate, spread on strips of cartridge paper, with the best effect : besides other reasons in favour of this plan, I find it a certain protection against the irritation of the nails. Internally, if the health of the patient will bear it, occasional purging by calomel and seidlitz powder will be found useful. In many cases the use of sulphureous water is beneficial ; and, if the disease be very chronic, the occasional use of these waters externally should be tried ; and if that be not convenient, a lotion of sulphuret of potash may do quite as well. The diet should be as little stimulating as possible, principally composed of milk and farinaceous substances : how far we shall totally exclude animal food must depend upon the condition of the patient : in some cases it is prudent, in other cases it cannot be entirely carried out.

A large number of cases of chronic eczema will get well under some modification of the means described above ; in a certain number of instances the disease will resist. Even in such cases the plan of local treatment before mentioned will be proper, but it becomes necessary to try some other internal means. I saw a lady a few weeks ago with a patch on the outside of the thigh, of several months' standing. She had been taking, for weeks, decoction of dulcamara with nitric acid, without any benefit. She was an exsanguined-looking person, of fifty, without indication of digestive disturbance. I advised the use of the following medicine.

Tinct. Cantharidis, ℥v. ad xx. or xxx. ;  
Magnesiæ Sulph, ʒss. ; Acid Sulph.  
dil ℥xv. ter die. Ung. Plumbi Comp.  
to the part.

In three or four weeks she was well. The dulcamara with acid frequently succeeds, but in these obstinate cases it much more frequently fails. The cantharides I have carried up to thirty drops three times a day, without ever having had the misfortune to induce strangury. In pale, flabby, debilitated persons, more especially women, this medicine may be strongly relied on. I have tried, in cases rebellious to all means previously indicated, still more energetic remedies, in the various forms of arsenic : I object to them unless the necessity be urgent ; because, although there can be no doubt of their influence on many cases of chronic cutaneous disease, yet they often produce so much persistent gastric and intestinal disturbance, that unless they are very carefully watched, and their use suspended so soon as any disturbance is manifested, I would prefer leaving the original affection uncured, rather than substitute for it a distressing kind of gastro-intestinal disturbance. I have occasionally used the chloride of mercury when other and

simpler means have failed, especially as a lotion in the vicinity of the anus, and I have occasionally had to congratulate myself on its success, but with this class of remedies I am always content to have nothing to do; I most readily admit that they will often very speedily affect the cutaneous disease; but they often set up others: and they have another drawback; their influence is often only temporary, and occasionally the disease will reappear in a short time after the remedy is laid aside.

Supposing a case to have proceeded satisfactorily under the use of some of the means indicated, the vesicles may have disappeared, the tendency to produce fresh ones is extinguished, but still the thin cracked cuticle may continue for some time to exfoliate and be irritable. Many persons employ vapour baths to remove that state, sometimes with success; but the issue is so doubtful that I rarely recommend them. Again and again it has happened to me to find that they excite the development of vesicles on a surface which has long been free from them; therefore I am content, if baths be used at all, to advise that they should be tepid, mucilaginous or alkaline, and not used too often. But if the patient be content to use the local means already indicated, with careful rolling, or a laced stocking, the skin will gradually acquire its natural character.

Still there are cases of chronic eczema, where the patient is in the prime of life, or even later if the health be good—the inflammatory action being considerable and accompanied with febrile disturbance—which are immediately and largely benefited by blood-letting. The extent to which it may be carried must depend upon the condition of the patient; but even if it be limited to eight, ten, or twelve ounces, the amelioration is out of all proportion with the means: the redness is made pale, the irritation is much lessened, and a person who has had scarcely any rest for a week will sleep comfortably the night after it is done. It seems, usually, also, that the cure is much accelerated; that remedies which were previously almost inert begin to act most kindly after the bleeding. I prefer general to local bleeding; but I admit that much good may be often derived from leeches applied in the neighbourhood of the diseased point. I have rarely known blood to be taken in eczema without presenting a decided buffy coat. The means to which allusion has been made may often be rendered more effective by the use of sedatives—henbane, for instance. I always hesitate to give opiates, for fear that they may damage the stomach, but occasionally it is necessary to procure sleep at almost any cost.

There is a circumstance of not much importance, but still it should be mentioned:

when a patient, suffering from acute eczema of the legs, is put into a bath, the legs sometimes appear of a dark slate colour. I do not know that it is of any consequence, but it is well to be aware of the fact; because a patient is sometimes alarmed at it.

We may have treated this affection very judiciously—we may have reduced a large extent of surface which has been the seat of disease almost to a healthy state; but at some point where there is most irritation, the vicinity of a joint, it refuses to yield. The integument has become thickened, indurated, and cracked, and general treatment is found to have no influence over it. In these cases local treatment of an energetic kind must be resorted to. Some persons are content to use ordinary stimulants for the purpose of modifying the morbid action which has become established at the part; others have recourse to cauterising substances. I am accustomed to use, in such cases, either the Ung. Hyd. Nit., the Ung. Hyd. Deuto Iod., the Ung. Sulph. Iod., or Ung. Hyd. c. Camph.: indeed, I think camphor a useful addition to the other forms. Sometimes I employ the Acet. Cantharidis. Some of these means will usually suffice, but I prefer the Unguents to the Acet. Lyttæ, which occasionally excites the development of a new crop of vesicles at the part. I have not seen cause to be better satisfied with caustic substances.

The consideration of eczema of the scalp I shall defer, for the purpose of considering it in conjunction with other diseases of that region.

## ON THE COMPOSITION OF MUCUS.

BY GEORGE KEMP, M.B.

Pet. Coll. Cantab.; Fellow of the Cambridge Philosophical Society.

(For the London Medical Gazette.)

THE extent of surface in the animal body covered with mucous membrane—the numerous diseases either originating in this membrane, or in which it participates—the remarkable modifications and visible physical changes which the mucus undergoes, and our total ignorance of the elementary composition of this secretion—must render it an interesting subject of investigation to the chemist, and one of great practical importance to the physiologist and pathologist.

At the suggestion, and under the direction, of Professor Liebig, I have endeavoured to contribute some in-

formation on the subject, by undertaking a series of analyses in the laboratory at Giessen. The subject operated on was obtained from the gall-bladder of the ox, and treated in the following manner.

After tying up the *ductus choledochus communis*, and removing the gall-bladder, the whole of the liver, &c. attached to it was carefully dissected off, and every trace of blood removed with filtering paper; an opening was now made with a lancet, and the bile slowly poured off, retaining the last gelatinous portion, which consisted principally of mucus mixed with the bile: this portion was allowed to run into a glass containing a mixture of absolute alcohol and water in equal proportions. After the gall-bladder had been apparently emptied, a longitudinal section was made, and the mucus scraped off the mucous membrane with a platinum-knife; this was added to the preceding

portion, and the further operation conducted as follows.

The mucus, after being well agitated with the mixture of alcohol and water, was separated on a filter, and the gelatinous matter thus left treated with ether, which removed the fatty matter, together with a small portion of cholesterine. The substance was again washed with very diluted alcohol, until the liquid passed off colourless, and gave no precipitate with nitrate of silver, and dried at a temperature not exceeding 100° Celsius. When moist, the mucus thus obtained may be described as a greyish, gelatinous, opaque mass, not soluble in water, but becoming transparent in this menstruum. When dried at 100° C., the colour changes to a dark olive.

The following were the results of the elementary analysis of this substance:—

I. 0.135 Gramme gave	Carbonic A. = 0.232	or Carbon = 0.0638	= 47.29 per cent.
	Water . . . = 0.087	or Hydrog. = 0.0096	= 7.15 “
II. 0.121 Gramme gave	Carbonic A. = 0.208	or Carbon = 0.057	= 47.26 “
	Water . . . = 0.075	or Hydrog. = 0.083	= 6.88 “
III. 0.238 Gramme gave	Carbonic A. = 0.407	or Carbon = 0.1118	= 47.00 “
	Water . . . = 0.153	or Hydrog. = 0.169	= 7.14 “

*Analysis for Nitrogen, after the Method of Varrentrapp and Will.*

I. 0.132 gr. gave	platino-bichlo. of hydrochlo. of ammo. = 0.269	or 12.93 per ct. of nitro.
II. 0.154	“ “ “ “ 0.315	or 12.98 “
III. 0.112	“ “ “ “ 0.234	or 13.19 “

The analyses I. II. in each case were made from the mucus obtained from one ox; but the quantity was too small to make an accurate determination of the ash, or a qualitative analysis of sulphur and phosphorus. The analysis III. was made from the mucus obtained from the gall-bladders of six oxen. The quantities of carbon, hydrogen, and nitrogen, were so similar, that it appeared unnecessary to repeat the analyses, especially as it was desirable to reserve as much as possible of the substance for the determination of ash. Again—

I. 0.338 gr. gave	ash = 0.034	= 10.05 per ct.
II. 0.400	“ 0.041	= 10.20 “

Deducting the ash from the above analyses, we obtain—

	I.	II.	III.
Carbon . . .	= 52.54	52.46	52.25
Hydrogen . .	= 7.95	7.64	7.83
Nitrogen . .	= 14.33	14.46	14.84
Oxygen & } Sulphur }	= 25.18	25.44	25.08

765.—xxx.

Considering the formula of Protein as  $C_{48} H_{36} N_6 O_{14}$ , and assuming that the quantity per cent. of carbon in the above analyses represents 48 atoms, or, in other words, that the equivalent of carbon is a constant quantity, we deduce the following formula for mucus: viz.  $C_{48} H_{39} N_6 O_{17}$ , and the quantity of the different elements per cent. should be as follows:—

Carbon . . .	= 52.84
Hydrogen . .	= 7.09
Nitrogen . .	= 15.40
Oxygen & sulphur	= 24.67
	<hr/> 100.00

If now we compare the formula of mucus with that of protein, we have—

Mucus =	$C_{48} H_{39} N_6 O_{17}$
Protein =	$C_{48} H_{36} N_6 O_{16}$
	<hr/>
	$H_3 \quad O = 3 \text{ H. O.}$

∴ Mucus = protein × 3 atoms of water.

2 X



Scherer found the middle coat of the arteries to consist of  $C^{48} H^{38} N^6 O^{16}$ , or protein + 2 atoms of water; we may

Protein . . . . . =  $C^{48} H^{36} N^6 O^{17}$   
 Protein + 1 at. of water =  $C^{48} H^{37} N^6 O^{15}$  not yet described.  
 Protein + 2 at. of water =  $C^{48} H^{38} N^6 O^{19}$  = middle coat of arteries.  
 Protein + 3 at. of water =  $C^{48} H^{39} N^6 O^{17}$  = mucus.

The remarkable resemblance of the composition of mucus to that of the middle coat of the arteries reminds us of the following fact:—In cholera, in inflammation of the mucous membrane of the bowels, particularly of the colon and rectum, and also in inflammation of the bladder and urethra, large pieces of consistent flaky substance are often found, which very much resemble the middle coat of the arteries, with the exception that no fibres can be detected. The attention of the medical practitioner is often directed to this circumstance by the patient, who suspects that he is actually voiding portions of skin. Bronchial polypi, and the false membrane in croup, present us with cases of large dense masses, most probably of altered mucus, retaining the shape of the parts on which they have been formed, and possessing considerable elasticity; though, like the middle coat of an artery, remarkably weak in proportion to their thickness.

The earliest opportunity will be embraced to ascertain the actual composition of these altered secretions.

If the mucus be treated with absolute, instead of dilute alcohol, it becomes coagulated, and in this state it is not possible to diffuse it through water.

It has been observed by L. Gmelin and Wöhler, that coagulated albumen, when exposed to the temperature of  $200^{\circ} C.$ , is entirely dissolved by water. In order to try the effect of a similar temperature on mucus treated with absolute alcohol, a portion was inclosed in a strong glass tube with water, and the tube sealed. At  $120^{\circ}$  the fluid became slightly coloured, at  $210^{\circ}$  the solution went on rapidly, and at  $213^{\circ}$  the tube exploded.

Carbazotic acid furnishes us with a very delicate test for mucus, provided no albumen nor other protein-compound be present in the fluid under investigation. These bodies can, however, be easily removed; and with this precaution the above acid is a valuable re-

therefore suppose a series of the following nature:—

agent, as it can be much more generally applied than the acetate of lead.

Sulphur exists in mucus, but the quantity has not yet been ascertained.

Giessen, July 16th, 1842.

## ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.

(For the Medical Gazette.)

[Continued from p. 605.]

THE seat of facial neuralgia is generally confined to the branches of the fifth pair of nerves, which are distributed among the bones of the face, to the eyes, nose, mouth, superior and inferior maxilla, tongue, and throat.

French nosologists, taking into consideration the distribution of the fifth nerve, have divided tic douloureux into four species:—viz., frontal, suborbital, maxillary, and facial; and thus minutely describe it.

In frontal neuralgia, the pain begins in the situation of the supra-orbital foramen, extending, at first, along the branches and ramifications of the frontal nerve distributed to the soft parts upon the cranium, and afterwards shooting in the direction of the trunk of the nerve towards the bottom of the orbit. In more advanced stages, the conjunctiva, and all the surface of the eye, participate in the effects of the disorder, and become affected with chronic inflammation, which is described as a particular species of ophthalmia. At length, the pain passes beyond the distribution of the branches of the frontal nerve, and affects all the corresponding side of the face and head. It seems as if it extended itself to the facial, suborbital, maxillary, and even to the temporal and occipital nerves, through the communications naturally existing between their filaments. Each paroxysm produces a spasmodic contraction of the eyelids, and a copious effusion of tears.

Suborbital neuralgia is first felt about the suborbital foramen. The pain extends to the inner canthus of the eye, the muscles about the zygoma, the inferior eyelid, the buccinator, the cheek generally, the ala of the nose, and the upper lip. The seat is probably in the suborbital nerve. At a later period, the pain appears to extend backwards to the trunk of the nerve, and the branches which are given off in its passage through the suborbital canal. Hence pains are then experienced in the upper teeth, the zygomatic fossa, the palate, the tongue, and within the cavity of the nose. As the disease advances, it may extend, like other neuralgiæ of the face, to the whole of the same side of the head. During the paroxysm, when the disorder is fully formed, an abundant salivation usually takes place. In general, the attendant toothache deceives the practitioner, who, in the belief that the pain arises from another cause, uselessly extracts several teeth.

Tic douloureux of the lower jaw, or maxillary neuralgia, is usually felt about the situation of the anterior orifice of the foramen mentale, and extends to the lower lip, chin, neck, and temple. This form of the complaint is more uncommon than the preceding, but, after it has prevailed some time, is equally remarkable for its intensity.

With respect to neuralgia of the facial nerve, or portio dura of the auditory, it is a case which very soon cannot be distinguished from other species of tic douloureux. The pains, at an early period, are no longer confined to the passage of the principal branches of this nerve between the parotid gland and ramus of the jaw; and its numerous communications with the rest of the nerves of the face seem to facilitate the extension of the disorder; so that the agony is soon felt over the whole face. The original source of the affection can be detected only by attentively considering the progress of the complaint in all its stages\*.

Pure cervical neuralgia is a rare species, and is not mentioned in the nosology of Chaussier, but it may be associated with the other forms, as will be seen by the following extract of a case I have given in my work on Tic Douloureux:—

Robert Clarke, Esq., a gentleman residing at Parmoor, Buckinghamshire, had been affected with facial neuralgia for a fortnight. The pain was constant and intense, and at times the muscles of the neck were affected with such violent spasmodic action, that his face was jerked forcibly round towards his shoulder. The seat of pain was in the supra-orbital branch of the fifth, and in the inferior maxillary\*.

Bellingeri, in his Physico-pathological remarks on a case of supra-orbital neuralgia, shows, from the origin and structure of the trifacial, that it is a vital nerve. It appears, he observes, to spring chiefly from the olivary body, a sort of ganglion, and in its structure it closely resembles the nerves of organic life, by the interlaced arrangement of its filaments, the presence of ganglia upon all its considerable branches, its repeated anastomotic communications, the occasionally augmented size of its parts, as in the trunk, in the ciliary nerves, in the external nasal, and in the posterior palatine nerve, which establishes a similitude between it and the intercostal, and by its being uniformly accompanied by arteries—a remarkable proof of connection with the functions of vitality. He might have carried the identity still further, for it dips into the middle cavity of the basis of the skull, in which all are vital nerves.

He justly argues that the influence of the fifth pair over all the secretions, viz. the lacrymal, that of the Meibomian glands, the mucous secretions of the pituitary membrane of the nostrils, the salivary secretion of the sublingual, maxillary, and parotid glands, the mucus of the muciparous follicles of the palate, mouth, cheek, tongue, lips, and tonsils, and even the cerumen of the ears, as well as its supplying the maxillary, sphenoidal, and frontal sinuses, the teeth, the internal parts of the ear, the pharynx, and periosteum, shows that it performs functions proper only to vitality.

He maintains that its constant association with the minute arteries of the face regulates the circulation of that part; and that all the change which the colour of the cheeks undergoes in shame, rage, terror, indignation, horror, joy, hope, and desire, are to be attributed to the influence of the fifth pair

\* Delpech, *Traité des Maladies*, in Cooper's *Surgical Dictionary*.

\* Vide Case iii. p. 135.

over the facial capillary circulation—a view which is far more reasonable than, indeed utterly destructive of, the notion that all these are dependent on the facial nerve; for the trifacial extensively supplies vital involuntary parts, and the actions in question are altogether of this character, whilst the facial is a voluntary nerve.

That the trifacial is a nerve of involuntary action, is rendered equally evident when it supplies muscular parts. The motions of the uvula, velum palati, and upper region of the pharynx, are all, as Bellingeri observes, involuntary and instinctive; and we find that those parts, with the circumflexus and levator palati, are all supplied by the palatine nervous filaments of the fifth pair. He shows, accordingly, that though mastication and deglutition be in some degree voluntary actions, those of the uvula, palate, and upper division of the pharynx, are entirely involuntary, and accomplished without effort or consciousness of the individual.

Even when the trifacial nerves supply the parts about the organs of sense, Bellingeri shows that the vital part of the properties of the organ depends on them, and the mental on the proper nerves sent to the organs.

The iris, he observes, derives its nerves from the ophthalmic ganglion, which is formed by the trifacial in conjunction with the general oculo-muscular nerve. In some rare instances the motion of the iris has been found to be dependent on the will; and in these he shows that the ciliary nerves received no branches from the fifth. It is known, also, that in certain species of animals, as the parrot, owl, and the rays, the circumstance of the iris being under the will of the animal is connected with the want of the ophthalmic ganglion.

The involuntary motions of the internal ear, he, in like manner, attributes to the anatomical fact, that the chorda tympani consists of filaments of the lingual branch of the fifth pair, extended over the cord; and to the associated fact, that the muscles of the stapes and malleus receive no branches from the seventh pair until the latter has been formed by the petrous branch of the vidian nerve of the fifth, after which it immediately distributes the appropriate filaments to the muscles specified.

As to the motions of the tongue,

Bellingeri states that the various nervous sources from which it is supplied are connected with the various functions assigned to it: also, that the tongue performs a mixed class of motions, which are sometimes involuntary, sometimes voluntary; the involuntary, or instinctive, being those exhibited in sucking, mastication, deglutition, and crying, in which the tongue assists, and which the new-born infant exercises instinctively. The lingual branch of the trifacial, he observes, contributes to the involuntary motions, since it sends filaments to the internal pterygoid, the mylo-pharyngeus, the styloglossus, the lingualis, and the genio-glossus, giving those muscles some degree of organic and involuntary character.

From all this Bellingeri concludes that, though, on the trifacial emerging upon the face, above and below the orbit, at the temples, in the region of the cheeks, and at the mental foramen, its filaments are immediately conjoined with those of the facial by anastomoses so close as to constitute almost one nerve, yet, so far as the trifacial is distributed to the muscles and integuments of the forehead, nose, lips, mouth, and face generally, it contributes only to involuntary or organic actions, and the voluntary motions depend on other nerves.

He repeats at the same time the observation made by Gall, that the trifacial nerve is more developed than all the nerves of the head in new-born infants; and that, even in the lower animals, its size is proportionably greater than in the human subject. The life of the foetus, then, being entirely organic, and that of brute animals, as it affects the face, making a nearer approach to instinctive or organic action than in the human subject, he shows that this circumstance, also, is in favour of the influence of the trifacial being of that kind denominated organic or involuntary.

In this manner Bellingeri shows that the trifacial nerves, whether they preside over organs of sensation, circulation, secretion, or more conspicuous motion, perform functions which are invariably independent of the will, and are to be regarded as strictly vital, and, consequently, that these nerves regulate all those actions, whether sensitive or motive, which are independent of the will. All this is to be understood,

he adds, of that which has been called its larger, plexused, or ganglioned portion only.

Thus we perceive that the trifacial nerves closely resemble those of the internal ganglionic system, which perform functions necessary to organic life; and we shall presently see that the fifth pair are peculiarly liable to be affected in *tic douloureux*. Of this Sir Charles Bell says, "I attribute it to the influence of the sympathetic nerve, and conceive that this is the reason why the disease is so often seated in the superior maxillary nerve, which has the most direct communication with the sympathetic."

P.S.—*Iritalgia*: Since the appearance of my first communication, in which I mentioned the curious form designated by M. Piorry *neuralgie irienne ou ophtalmique*, a case, similar in many respects, has presented itself to my notice. The pains, in the present instance, commenced over the superciliary ridge, and from thence darted into the iris and orbit of the eye. The sight was so obscured as to render objects indistinctly visible in the shade; and the bright light of a candle produced a halo, exhibiting dull prismatic colours. On the cessation of the pain, which was acute and lancinating, blood was extravasated on the conjunctiva, and a species of ophthalmia remained for several days. There was no vomiting, as in Piorry's case; but the local affection was associated with gastralgia. I do not here confound gastralgia with common gastrodynia, which are generally considered as almost synonymous; but allude to that darting, suffocating, and lancinating affection of the parietes of the thorax, so characteristic of neuralgia.

Had not M. Piorry's case been fresh in my memory, and had I not been aware of the strong neuralgic diathesis manifested by my patient, I should, perhaps, have been at a loss to account for this sudden seizure. Some months since, she came under my care, suffering from gastralgia, which alternated with an extremely painful affection of the leg and foot, in conjunction with many obscure and anomalous symptoms.

[To be continued.]

## ON THE PERIOD OF PUBERTY IN NEGRO WOMEN.

BY JOHN ROBERTON, ESQ.

Late Senior Surgeon in ordinary to the Manchester Lying-in Hospital.

PERHAPS you will oblige an old correspondent by inserting the inclosed paper on the period of puberty in the negress in the *MEDICAL GAZETTE*, when you have room\*.—I am, sir,

Your obedient servant,

JOHN ROBERTON.

Manchester, July 6, 1842.

In a paper on the natural history of puberty in the female sex, in the different races of mankind, published in the *Edinburgh Medical and Surgical Journal*, vol. xxxviii. I have attempted to show that we possess no credible evidence in support of an opinion, almost universal, that puberty is earlier in hot than in temperate and cold climates; and further, that there is reason to regard such an opinion as no better than a vulgar error.

That the opinion in question is entertained abroad equally as in our own country, the following passage from the *Physiology* of Professor Müller, recently published, will sufficiently prove:—

"The period of puberty, the commencement of that part of life which is distinguished by the capability of propagating the species, does not occur exactly simultaneously in the two sexes; and still greater variety in this respect is caused by differences of nation and climate. Puberty declares itself in the female sex of our climate about the thirteenth, fourteenth, or fifteenth year, and is indicated by the occurrence of menstruation. In hot climates, the body undergoes the changes of puberty earlier than in cold climates. It is stated that in the hot regions of Africa they take place in the female sex as early as the eighth year, and during the ninth year in Persia. Young Jewesses are also said to menstruate earlier than other females in our own country."—*Elements of Physiology* (translation), vol. ii. p. 1480.

In my paper before mentioned, it is

\* We have great pleasure in complying with Mr. Robertson's request. The paper originally appeared in the *Edinburgh Medical and Surgical Journal*.—ED. GAZ.



proved by a body of facts\*, first, that the age of puberty, manifested by the appropriate sign, varies considerably in our own country; that, instead of the fourteenth and fifteenth years, as is commonly asserted, it occurs in a more extended range of years than authors have alleged; and that, while a certain small proportion of women arrive at puberty in the eleventh year, others have not reached it till eight or nine years later; namely, the twentieth year. In other words, that puberty is a phenomenon which varies in different constitutions—as much a constitutional peculiarity, in fact, as the colour of the hair or the form of the face; that while in a great majority of instances it is arrived at in the fourteenth, fifteenth, and sixteenth years, in a number of constitutions it is several years earlier, and in others a few years later, the occurrence of the phenomenon extending through a range of about nine years. In the second place, that the union of the sexes at an early age, and early child-bearing, so often noticed by travellers in warm latitudes, where there is a low state of civilization, are not owing to the women ripening earlier than in England, but depend upon a variety of causes originating in ignorance and barbarism †, the chief of which are

\* This refers to a table showing the age at which 450 women began to menstruate.

† A few centuries ago, juvenile marriages were not uncommon in Europe, the parties often marrying in infancy, and beginning to cohabit at or soon after the age of puberty. It would seem from various facts that the women were considered marriageable in the twelfth year; thus Matilda, wife of Prince William, son of Henry I. (who was drowned), was left a widow at the age of twelve years, six months after her marriage. In the reign of Richard II. the son of the Earl of Cambridge was married to the only daughter of the King of Portugal; the parties being only ten years of age. The father of the husband having withdrawn his son from Portugal, the lady was soon after given to John, King of Castile. Richard II. himself married Isabella, daughter of Charles IV. of France, in her twelfth year. By an arrangement between Edward IV. and the then Louis of France, Elizabeth, the daughter of the former, was to be married to the Dauphine when she completed her twelfth year. Richard, the son of the above Edward IV. was married in his fifth year to Ann, the daughter and heiress of John Mowbray, Duke of Norfolk. Again, the niece of Richard III. Anne de la Pole, was affianced to the eldest son of the King of Scotland, the marriage to take place as soon as the parties arrived at puberty. The Princess Margaret, daughter of Henry VII. was contracted in marriage to James of Scotland, in the twelfth year. She remained, however, twenty months before removing to the house of her husband. Catherine, afterwards wife of Henry VIII. was married to Prince Arthur, and lived with him as his wife,

juvenile licentiousness, and preposterously early marriages; and that, did our standard of morals and social customs permit or encourage the same early union of the sexes in this country as takes place in those regions, instances of child-bearing in the twelfth, thirteenth, or fourteenth year, would be as common here as between the tropics; and, thirdly, that this explanation of the source of the fallacious notion which travellers and others have promulgated, is borne out by what we learn of the ages women marry and bear children at among the Esquimaux and other half-savage northern tribes; in the case of whom marriages are formed at ages quite as early as among the intertropical races. For the number and nature of the facts adduced in proof of this opinion, however, I am obliged to refer to my paper in the *Edinburgh Medical and Surgical Journal*, already mentioned; except, I may state, that since its publication, I have noticed some facts in addition to what I had previously gathered as to the early ages of marriage among the Esquimaux, in the narratives of arctic voyagers. Thus, Sir John Ross, in the journal of his second voyage, says, referring to the Esquimaux women of Boothia Felix, with whose manners he had been long familiar, "All above thirteen years of age seemed to be married, and there appeared three or four such in every house; whether belonging to one establishment or not, we were not sure, but appearing to be the young wives in a house where there was one old one."—Page 251.

In the present essay my remarks are confined to a single race of mankind—the negro; respecting whose anatomy and physiology in general, there has long been controversy, and concerning no particular more, if not of controversy of vague and contradictory assertion, than with respect to the age at which the female reaches puberty. In my former paper will be found all the information which, after diligent research, I could discover tending to throw light on this subject of inquiry; but the amount is so little that I have recently set myself to obtain facts of a

when he was fourteen years old; and Henry, after his brother's death, married and lived with her when he had completed his fifteenth year. See Lingard's *History of England*, 12mo. Vol. ii. p. 126; Vol. iv. pp. 202, and 235; Vol. v. pp. 332, 235, 263, 328, and 335.



more decisive kind than are to be found in books, from persons living where there are negroes; and it will be seen, not without a good degree of success. After failing in attempts in various quarters, I was advised to apply to the two superintendents of the Moravian missions in the islands of Antigua and Jamaica, on the ground that, besides the well-known readiness of the Moravian body to promote every good object, they had for a long period had registers of births kept at their mission stations, whereby these intelligent men would be able to furnish facts concerning the age of puberty more to be depended on than those of missionaries destitute of such records. Accordingly, I wrote to the Rev. Bennet Harvey and the Rev. John Elliott, superintendents of the missions just mentioned, and the following (which is the substance, not the precise words of my communication) will explain both what it was I wished to ascertain, and the manner in which the inquiry was to be conducted.

"Having long been desirous of procuring facts concerning the age of puberty in the negress, I am induced to apply to those who have the oversight of Christian missions, feeling persuaded that, if the intelligent missionary does not aid the physiologist in collecting information regarding the less known varieties of our race, help from other quarters is not likely to be obtained. In England, I find that some women begin to menstruate in the eleventh year, and others not till the twentieth, a great proportion commencing in the fourteenth, fifteenth, and sixteenth years of age, which proves that the period of puberty differs in different women; but a number of writers deny that negro women begin to menstruate at periods so late as the above; affirming, on what evidence I have not been able to discover, that they commence at the ages of eight, nine, and ten years. Now if it be true that the negress menstruates thus early, I should be glad to know it as an ascertained fact, or, if it be erroneous, to know what is really the age of puberty in that race.

"It is not easy, I learn, to institute an inquiry such as this, owing to the difficulty of ascertaining ages with the requisite degree of exactness; an impediment which may probably, however,

be obviated by a little care; since, I am told, the ages of a number of the negroes attached to the missions have been registered in infancy. If so, I should be glad to learn the ages at which fifty or (if more cannot be furnished) even so few as twenty negresses arrived at puberty; the main thing being to see that the fact in each instance is ascertained accurately. Twenty instances procured thus would be invaluable, though a larger number would of course be desirable. Unless, however, the negress's age in each instance is absolutely known by reference to the register, and stated in the returns, the latter will be of no value. The age when the menses appeared it will generally be easy to find, as nearly every woman can tell regarding this point for herself, but the fact, when practicable, should receive corroboration from the testimony of a mother, a sister, or other female relation or friend."

The above was dated June 1841. In a few months a reply was received from Mr. Elliot, of Jamaica, addressed to a friend in Manchester, acknowledging my letter, with a request to inform me that I might expect a communication as soon as he could make up what would be a sufficient number of cases. "Had he been satisfied with *opinions*," says this gentleman, "I could soon have answered him. My own opinion was, that the females, of whatever race, arrive sooner at puberty in a tropical climate than in colder regions; but I only follow the opinions of others in this, and they probably based theirs on analogy between the animal and vegetable worlds. Experience proves that there is no such analogy." The latter remark refers to certain results he had even then obtained from the inquiry of a nature contrary to his anticipations.

In November the promised communication from Jamaica arrived.

*"New Carmel, Jamaica,  
Oct. 18th, 1841.*

"The table on the first page of this sheet, I trust, will be useful to you in the investigation and promulgation of the subject mentioned in your communication of June 8th this year. I could have added many cases of negresses from eight to eleven years of age in whom there is as yet no menstrual ap-

pearance. I believe you may rely on the accuracy of those you now receive. Wishing you and all who feel an in-

terest in the too long degraded, tra-duced, and the oppressed children of Africa, the divine blessing.—I am, &c."

Number of Negresses.	Age at present.	Age when the menses first appeared.	Whether the name be in register or not.
1	16	13	These seven names are not in our register, but have been kindly supplied by a proprietor, in whose estate's book they are registered, and whose accuracy may be depended upon.
2	36	15	
3	21	14	
4	46	14	
5	50	16	
6	22	14	
7	21	12	
8	22	15	In our register. do. do. do. do. do. do. do. do. do. do. do. do. do. do."
9	16	13	
10	16	15	
11	12	12	
12	13	Not yet.	
13	11	do.	
14	13	do.	
15	13	13	
16	14	Not yet.	
17	12	do.	
18	10	do.	
19	8	do.	
20	9	do.	
21	8	do.	

This table supplies evidence as to the age of puberty in the negress, both of a positive and negative kind. The positive evidence rests on twelve cases in which the menses appeared—in one aged sixteen years, in three fifteen, in three fourteen, in three thirteen, and in two aged twelve years; and the negative evidence rests on nine cases in which menstruation had not commenced, viz. in one aged fourteen, two thirteen, one twelve, one eleven, one ten, one nine, and two aged eight years. There is, we have seen, this further information in the letter, "I could have added many cases of negresses from eight to eleven years of age in whom there is as yet no menstrual appearance."

Five months subsequently, namely, in April 1842, I received another communication from Mr. Elliott, inclosing a second table, the facts in which were collected not by himself but by another missionary. Mr. Elliott writes, "I brought the subject of your request before the Rev. Mr. Zorn, the president of our mission in this island, and (inclosed) transmit you the result of his inquiries, which I have no doubt will prove satisfactory, though not exactly according to your prescribed form."

It is evident from Mr. Zorn's document that he has not fully apprehended the drift of my inquiries; a circumstance which, although it has rendered his replies in a number of instances incomplete, or rather, of little or no use, does not impair the great value of the remainder. The document is headed "Extracts from Church Book;" and these extracts are arranged in a tabular form in four columns. The first column furnishes the number of names as they stand in the Church Book; the second the initials of the names; the third the dates of baptism, and the fourth column "whether or not they have menstruated in December 1841." At foot of the table is this note, signed by Mr. Zorn: "The above forty-two (instances) were taken as I could get information, without any design but truth. The idea of any (menstruating) younger than the above (under twelve years) was ridiculed by nurses. The date is of baptism, and a few may have been a year or two old at baptism; the greater majority, especially of the younger ones, were baptised in infancy."

The results afforded by Mr. Zorn's table, assuming that the year of baptism

may stand for the year of birth, and we learn it does not in every instance, may be thus summed up.

One negress, baptised December 1827, menstruated first in November 1841; that is, in her fourteenth year.

Fourteen\* negresses, seven of whom were in their nineteenth year, one in the eighteenth, four in the seventeenth, and two in the fourteenth year, were found to have menstruated December 1841; that is to say, had passed the period of puberty; how long past it does not appear from Mr. Zorn's table. The consequence is, no idea can be obtained as to the precise age of puberty in these fourteen cases.

Twenty-seven negresses had not yet reached the period of puberty, as shown by the natural sign, menstruation, whose ages, December 1841, were one in her twentieth year (stated as "healthy"); two in the seventeenth, ("healthy"); six in the sixteenth; seven in the fifteenth; five in the fourteenth; five in the thirteenth; and one in the twelfth year: in all, twenty-seven.

Of positive evidence, as to the age of puberty in the negress, Mr. Zorn furnishes one case where the individual first menstruated in the fourteenth year of her age; and of negative evidence, a body of twenty-seven cases, the particulars of which it will not be necessary for me to recapitulate; only I may remark, that negative evidence, provided the females are healthy, and there is no reason to doubt of their being so in the present instance, is to the full as valuable and conclusive as any positive evidence whatever.

From Mr. Harvey, island of Antigua, I had an answer in the beginning of the present year, to the following effect:—

*"December 3, 1841.*

"In reply to your inquiries forwarded to me some months ago, I beg now to inform you that, in pursuance of the objects proposed in your communication, I lost no time in referring them to Dr Nicholson, of the firm of Musgrove and Nicholson, of this island, as the best method I could adopt for your purpose, and that having given

\* One is stated as being a mulatto; also, of these fourteen, one negress in the eighteenth, and two in the sixteenth, years of age, are said to have each "one child."

the subject his candid attention, as I have been aware of his doing ever since it was submitted to his consideration, he has furnished me with a reply, which is herein inclosed, and which is the best answer I can possibly return to your queries."

The letter of Dr Nicholson here referred to, to the Rev. Bennet Harvey, is as follows:—

*St John's, December 1, 1841.*

"I am very sorry that I have failed in my attempt to procure the information Mr Robertson desires, and which I believed and led you to expect I should have been able to obtain with the utmost facility. My disappointment has been occasioned by various causes. In the first place, the records of births, which, previous to emancipation, were accurately kept in every estate, have been lost or destroyed since 1834, and therefore it is no easy matter to ascertain the ages of young females of that class. With the assistance of the ministers and baptismal registers, I believe this obstacle might have been overcome, had not another of still greater importance occurred, which I have as yet been unable to remove. When I began my inquiries, I stated, perhaps imprudently, but for the purpose of satisfying them of the purity of my motives, that the information sought was required by one of their ministers who was much interested in their welfare. To this circumstance I attribute chiefly my complete failure. They began to suspect that my object was to discover their immoral practices, which I am sorry to say I have reason to believe are begun at a very early age, long before the natural signs of puberty are developed. The mothers either denied all knowledge on the subject, or gave such answers as convinced me that no dependence could be placed on any thing they said. At present, therefore, Mr. Robertson must be content with the bare result of my experience, derived from upwards of nineteen years' practice in this island; and although I possess no written record of individual cases, I consider the general result to be as accurate as if it had been drawn from documents of a more authentic appearance.

"First, I have never met with a case of menstruation before the twelfth year, either in whites or blacks; but I have

met with a few cases at that age, both in whites and blacks, and in the mixed race. That such cases are rare is proved by the fact of my having been consulted professionally on account of that circumstance.

"*Secondly*, menstruation commences most frequently in the fourteenth or fifteenth years; and I know no difference in this respect between the whites and blacks; but cases of tardy menstruation from chlorosis are more frequent with the latter: this I do not attribute to any constitutional difference existing in these races, but to local causes affecting the individual, such as miasmal effluvia, to which the blacks are more exposed. In such situations the young males are subject to a disease termed *Mal de Estomac*, the pathology of which is similar to chlorosis.

"*Thirdly*, I have never met with a case of pregnancy occurring before menstruation had appeared, but I have been told that such has been the case in this island; and I met lately with two cases in which the first conception took place whilst the patients were labouring under suppression of the catamenia.

"*Fourthly*, a regular monthly discharge during pregnancy, in every respect resembling the catamenia, is not an unfrequent occurrence in this island, particularly with the whites of a sanguine temperament.—I remain, my dear Sir, yours very sincerely, THO. NICHOLSON."

This able and valuable letter, and the still more valuable tables from Jamaica, the facts and opinions, though derived from three independent sources, agreeing in a remarkable manner, call for no further comment or explanation. I venture to hope that the evidence they supply will be thought sufficient to settle this long disputed point regarding the supposed earlier maturity of negro as compared with white women—to settle it for ever in the negative, or, let me say, till opened afresh by the authority of well-ascertained facts. At the same time, this evidence may help to cast doubt on other popular notions of a similar kind, as that the sexual feelings are naturally less under control in warm countries than in our own; that the intellect of the dark varieties is naturally inferior to ours, and many more,

which, while they are little creditable to the good sense of those who entertain them in the absence of all proof whatever, exercise an ill influence on public opinion in our varied relations and intercourse with, and treatment of, the coloured races in our colonies. For how trifling soever erroneous opinions such as these may appear to be, when viewed apart from their consequences, every one read in the history of European intercourse with intertropical nations knows that their influence with reference to whites and blacks alike, has been, in more ways than one, extremely pernicious.

In conclusion, I may be permitted to allude to the vague notions still existing both in and out of the medical profession as to the effects of certain mental and physical circumstances in hastening or retarding puberty in the whites of Europe; for example, that working in heated factories accelerates it; that the state of manners which exists in populous cities has a similar effect: and that it is later in women of the peasantry than in the inhabitants of cities, especially the higher orders. If all this be true, where is the evidence? I believe it is yet to be collected. With regard to the alleged forcing effects of cotton factories on the female constitution, I can testify from inquiry that it is destitute of truth. And, perhaps, it would not be unjust to rank the whole of these opinions as entitled to about equal credit, (at all events as equally in need of proof, and probably as equally incapable of receiving it,) with that curious scrap of natural history to be found in Herodotus, *Thalia* cviii., Beloe's translation:—"The lioness," says the venerable father of history, "of all animals the strongest and most ferocious, produces but one young one in her life, for, at the birth of her cub, she loses her matrix. The reason of this seems to be, that, as the claws of the lion are sharper by much than those of any other animal, the cub, as soon as it begins to stir in the womb, injures and tears the matrix, which it does still more and more as it grows bigger, so that at the time of its birth no part of the womb remains whole."

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ON  
ARTIFICIAL CLIMATES

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH.

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 434.]

PART II.—ON THE ATMOSPHERIC TREAT-  
MENT OF THE LUNGS AND SKIN.

THE first division of my subject, namely, the treatment of the lungs by an atmosphere distinct from that which invests the skin, may be pronounced, I conceive, as important a study as any which now offers itself to the attention of the physician; and as inviting, since it is one almost novel. On account of this novelty, however, I find but little to offer to the reader beyond my own materials; and these, from the limit I have prescribed to myself, I have condensed as much as was compatible with any discussion of the question.

Regarding the respirator there are many interesting facts, connected with its use in particular diseases, which I omit; and I leave it to the professional reader to observe the extent to which this instrument from its principles may, and in practice does, fulfil the several eight indications I have considered to be comprised under an atmospheric treatment of the lungs. For an apparatus admitting of locomotion, it fulfils more of them, in a greater or less degree, than any other equally portable which I am able to devise. To the variety of ways, direct and indirect, by which it acts, as much as to the extent of its action in any one, may be traced the remarkable effects of an instrument wearing so simple an aspect. This simplicity was not attained at once. The mind had to pass through a circuitous path of complicated ideas and forms before it was arrived at. The path to it now appears so direct, and the construction so simple, that many persons are unable to credit its efficiency, being unwilling to give attention to the principles upon which it acts. While I have therefore urged the propriety and importance of attention to these points, I shall stand acquitted before all superior minds of any undue partiality towards an offspring of my own, or any desire to establish for it a reputation beyond its deserts. A part of that mental disci-

pline which is requisite for a successful investigation of philosophical truth, is a readiness to relinquish any theories, and practical measures founded on them, whensoever they prove unsound. Such a discipline no one can be more desirous to exercise than myself.

In closing this portion of my subject I cannot refrain from reverting to the measures I have suggested for the atmospheric treatment of the lungs in the acute stages of pulmonary diseases. With the utmost deference towards the professional opinions of the day, and with the highest respect for the learning and experience of others, I cannot view the treatment of these diseases as standing upon a proper footing until a full and fair trial shall be given, in conjunction with ordinary measures, to the one I have contended for as of leading importance, namely, the exhibition of an artificial atmosphere to the pulmonary membrane in acute diseases of the chest, of a temperament varied to each case, and exercising its genial influence on the membrane unremittingly. And even in the case of sufferers at night, in many *chronic* affections of the chest, an apparatus and respiring chamber, supplying an atmosphere to the lungs distinct from that of the room, might, I believe, afford a full measure of that comfort which is partially yielded by the respirator to many who wear it at night.

Under the atmospheric treatment of the lungs and skin, may be included a much wider field of inquiry than my remaining observations will occupy. I shall confine them to one subject only, the general management of domestic atmospheres. On some important points connected with this subject I have expressed myself freely in former papers in the *GAZETTE*. The additional experience of subsequent years has served only to confirm every position then taken. As the public is, and ought to be, much guided by the opinion of the profession on such subjects, and as I am compelled to think the diversity of opinions within the profession arises mainly from a want of logical caution on the part of some who have undertaken to become instructors in these matters, I desire in the present observations merely to invite attention to certain disputed points, unanimity, as far as possible, in the profession, upon questions referred to



it, being very desirable. The points I propose to touch upon are the following:—1. The supply of air in dwellings. 2. The ventilation of dwellings, or measures for introducing and removing air. 3. The warming of dwellings, and of their atmosphere. 4. The *temperament* of the atmosphere of dwellings, or its proper hygrometric condition.

1. The supply of air in dwellings. If the question of supply related to the smallest quantity which would suffice to support life, it might then be right to take our estimate chiefly from the supposed consumption of air by the lungs, our lungs being the organ, the need of which for air is imperative. The physiologist is aware that the inquiries of different experimentalists have led to widely differing estimates of the pulmonary demand—a result no other than might be expected from the liability of the dilative movements of the chest to vary from their involuntary average, when they become voluntary upon the attention being drawn to them. But even if the trial could be made without any deviation from the natural average of the dilatation and contraction, I am inclined to think a very different quantity would be indicated by different persons; and that this would by no means always correspond with the capacity of the chest, or size of the individuals. It is well known that exercise of the body generally, or of the chest in much speaking, materially increases the demand for air; and it is more than probable that they render the demand by habit permanently large in the intervals. Hence the great difference between the results of various trials, which range from 200 to 400 cubic inches as the quantity per minute of air respired by a man, need not cause the distrust in them which it otherwise would, there being in all probability a large actual difference in different persons.

Amongst many important and interesting points connected with what might be termed the statics of the chest, which have appeared to me to merit much more attention than they have received, is the different character of the air of ordinary respiration, and of that more durably resident in the chest. The latter air having received little attention beyond the bare acknowledgment of its quantity, I was

led in papers in the *GAZETTE*, published early in 1838, to urge at some length the importance of making it the subject of different experiments from those embracing the air of ordinary respiration. I ventured then to predict a result, from experiments thus conducted, very different from that of the experiments upon which the received estimates had been founded; and I proceeded to shew that, in these, the carbon supposed to be exhaled in twenty-four hours from the lungs of a man, exceeded greatly the whole of what was contained in the food he consumed; and I endeavoured in other ways to give point to the argument, that I might ensure its attracting the attention of some physiologist more at leisure to conduct the experiment. In the following year Mr. Coathupe detailed experiments before the British Association for the promotion of Science, conducted with the precautions I had pointed out, and they led to the conclusions I had ventured with confidence to anticipate—namely, that the carbonic acid discharged from the lungs in twenty-four hours does not exceed one-half the quantity estimated by most former experimentalists. I am also glad to find Dr. Carpenter, in his *Treatise on Human Physiology*\*, recently published, expressing a similar confidence in Mr. Coathupe's experiments, and adopting the view I had taken, and the argument I had drawn from the food consumed; from which it may be affirmed that most estimates were greater by one-half than it was possible could be true. The importance of this view of the question is placed in a strong light by the consideration that, if the estimates themselves were all much too high, any discrepancies between them were not worthy the numerous experiments of physiologists to correct them. It would, I conceive, have saved much writing, and given a right direction to many an experiment, if the inquiry had started from the proper point, namely, some estimate of the carbon taken in as food. It would have been manifest of any experiment, however correctly made, that it must be founded in error, if it shewed the carbon exhaled to exceed, or even to equal, the quantity swallowed.

\* *Principles of Human Physiology*, pp. 436, 437.

Although, however, the quantity of carbonic acid discharged from the lungs may be, and I have no doubt is, much less than has been commonly supposed, any estimate of the air merely necessary to support respiration ought not to enter into the question of healthful ventilation.

The importance to health of bodily exercise is admitted by every one; and the greater general salubrity of trades requiring muscular exertion, than of others, has not failed to attract the attention of those who are interested in the condition of the labouring classes. Yet we shall find, upon a review of nearly all human occupations, that their salubrity, important as exercise is, depends much more upon the extent to which they are carried on in the open air. It is, no doubt, true that many delicate persons become diseased, and diseased persons perish, by the exposure to cold which such occupations involve; and we might require such cases to be excepted, since the question is not that of *temperature*, but of *fresh air*. Were the air mild, its freshness, that is, boundless quantity, would even be to these invalids of passing importance to their recovery. Our case, however, is so strong, that we need not avail ourselves of any exceptions. We might allow all such instances to be thrown into the scale against us, and we shall still find, healthful as occupations attended with muscular exercise are, that the healthiness of occupations bears a much nearer relation to the quickness with which the air around the body is exchanged.

Indeed, in the confined atmosphere of some workshops and warehouses, muscular action itself sometimes proves injurious rather than beneficial. I believe that labour in a confined atmosphere will often produce symptoms of a disturbance of the balance of the circulation, with an injurious determination of blood to particular parts. Even long-continued calm weather is so perceptibly less salubrious than breezy weather, that the difference has not failed to attract notice at all times. We have evidence on all hands of the powerfully beneficial influence of a constantly renewed atmosphere on the human frame. We may find proof of it at every turn. Thus, with all the freedom of the winds changing the air of any place, we might have supposed

abundantly, how invariably do we find still more to be gained by "a change of air" on our part. A considerable degree of vigour, indeed, may be attained even in an atmosphere of very inferior salubrity, by a constant flowing of air past the body; that is, by keeping much out of doors. Even in very close parts of a city, the children of the poor, as soon as they are old enough to be continually out of doors, playing in the alleys and courts, and before their confinement in factories, wear a sufficiently healthy appearance, and are exempt from much ailment incident to earlier and later periods of their childhood, when their days are spent in a confined atmosphere.

Not to enlarge unnecessarily upon evidence of the fact, let its inferences command our attention, and we cannot fail to perceive one of great importance, namely, that in the case of the multitudes whom necessity, or inclination, confines within doors during the greater portion of their time, it must be desirable that air should be brought in in large abundance to them, since they do not go out to live in the air. There is nothing in the materials of a house, any more than in its name, which can change the constitution of its inmates, and render them, when immured within it, less susceptible of the beneficial influences of a constant and copious change of the air around. The subject demands much more attention than a mere common-place admission respecting sufficient ventilation. It is right that we should bear in mind the various cases on record of hospitals, ships, workhouses, schools, and prisons, brought from a pestiferous to a wholesome state by "sufficient" ventilation: but, when contending for sufficient domestic ventilation, we must not rest satisfied with instancing these, for they do not go far enough to reach our case. Each householder will fail to draw any inferences from such instances respecting his own apartments, which he knows to have been never pestiferous, nor, perhaps, even perceptibly unhealthy; and which he, therefore, pronounces "wholesome enough." We must, therefore, proceed on from these gross instances, and point out to him the immunity enjoyed by those who constantly breathe the outer air, from a large portion of the stomachic ailments which, sooner or later, trouble

him in his studio or in his office; and we must show him that, desirable as exercise is, the sedentary nature of his occupation is but partially a cause undermining his health; that in being deprived of a constant renewal of the atmosphere, he lacks the great support of vigour; and that, while he cannot remove the former cause without changing his pursuits, he may do much towards correcting the latter. We should thus endeavour to impress on his mind this important consideration, namely, that the only limit he should set to the quantity of air he would cause to flow through his apartment should be at the point where the supply became too large to be properly warmed before it entered, and the current consequently unpleasant or injurious. There are many commercial and literary men who take sufficient exercise for the maintenance of health, but who fail to enjoy it chiefly from this cause. Useful as is the mental relaxation during a change of air, it is the change of air, as such, which largely conduces to an improvement of health. It is that constant renewal of the atmosphere about the body which takes place during a journey; and from this we ought to point out the obvious indication, that of renewing the atmosphere of dwelling apartments, and especially of offices, as frequently as possible.

I cannot entertain a doubt that whensoever a greatly more efficient system of ventilation shall be introduced, many of the penalties to health at present imposed on merchants and their clerks by their in-door occupations, will be removed. The same expectation might be entertained, with good reason, of the numerous cases of literary men, and of females, whose in-door life deprives them of the invigorating effects of a constant flowing past them of fresh air.

We are thus led to consider,

II. The ventilation of dwellings, or practical means for introducing and removing air.

Having endeavoured to impress our minds with the importance of setting no limit to the enjoyment of air in our houses, but such as its temperature and current may impose, the next inquiry embraces the reduction of this object to practice, or what is commonly termed the ventilation of buildings. Confining my remarks as before, with

a view to brevity, chiefly to dwelling-houses and offices, I shall direct them to two leading questions in the art of ventilation—the power employed, and, the direction in which the ventilation takes place. A little careful attention to these points appears to me greatly needed at the present time, especially by members of the profession.

From a want of this, views and arguments very delusive, and indeed injurious, are propagated even by persons who desire to advocate a healthful system of ventilation. There are many questions, the daily recurrence of which causes them to appear common-place, and thus to suffer neglect, whereas it adds to their importance, and should to the attention they are afforded. Through this cause, we remain all our lives resting at the surface of many subjects, with our minds satisfied with indistinct ideas, produced by the vague and general terms current upon them. To this may be attributed the erroneous views, and incautious language, of many persons, who, upon questions which engage their attention duly, are sufficiently logical.

With respect to the force necessary for changing the air of our apartment, it must be obvious that this depends, not upon the inertia or resistance to motion of the air already in the room, which could be easily moved onwards by a trifling power, but upon the resistance offered to its entry and exit, by the crevices or passages through which it has to pass. This would have been a superfluous remark, had not, in a statement made in a popular work, an illustration been employed the object of which was to show, by the ease with which the whole air of a spacious room might be pressed onwards, that the force required for ventilating a building of the largest dimensions was altogether trifling; whereas, so long as the supply is drawn directly from the cold external atmosphere, our endeavour must, and will always be, to reduce the crevices as much as possible, so as to prevent winds and currents of air from without from pressing in draughts of cold air. To ensure the entry even of the too moderate quantity of air we usually subsist upon, a steadily acting power of some certain amount is necessary. Yet the unit, or smallest available quantity of any of

the powers usefully employed in the arts, is too large for the ventilation of most private dwellings, with the exception of human power. But if the unit of this power be employed—that of one man, it could only be given a steady and uninterrupted action, day and night, by an indirect employment of it, as by raising a weight which, in its descent, might keep in motion a ventilating machine. A sagacious mechanic would, I think, on due reflection, pronounce against such a device. I may, from considerable experience in ventilating machines, express an opinion, that any machines of the kind left to work by means of a weight, will, in their unprofitable results, wholly disappoint any person who shall endeavour to reduce them to practice.

For the purpose of ventilating any ordinary dwelling-house, we have another power much cheaper and more easily employed than human labour, even if used in the most direct and simple manner; but with the complicated multiplying wheel-work, like that of a jack, but much more in quantity, which would be required for driving a fan-wheel, or pump, of necessary dimensions, so large a part of the power would be lost by friction, however well the apparatus should be contrived, as to render it almost useless, while the expense of it, and of its connexion by pipes with each room, would be very considerable. This *indirect* use of *human power* I consider applicable to no cases. But in also pronouncing against its *direct* employment I do not include the case of public buildings, occasionally used. It is the uninterrupted night and day ventilation of a dwelling-house to which my present remarks apply. For this purpose there is no power which can be so advantageously employed as that which arises out of the buoyancy given to air by heat: but to avoid a misapplication of this excellent power it is necessary we should escape the extravagant notions which some persons entertain of its force\*. A column of

warmed air, being thereby expanded, has in the same bulk fewer particles than cold air. It is therefore lighter, and cannot balance the pressure of any columns, equally high, of the colder air around it. If it be within doors, it cannot balance similar columns without, which therefore tend to press in and raise up. If the air in question be that of a room with a closed chimney, the cold air tends to come in at its lower crevices, and to push the warm air out of the room at its upper crevices, or some other openings. As this is the kind of ventilation which is still strongly advocated in some quarters, I again invite attention to the subject. This is an instance in which cases wholly different have been associated together. The mistake has been made of forming a judgment about the ventilation of an ordinary room or office, from facts observed in a lofty building, occupied by a crowded assembly. Though the very defective ventilation of such buildings is admitted, and cannot indeed be overlooked, the dependence of the ventilating current upon the buoyancy given to the air by the animal heat of the accumulated bodies is viewed as natural and proper, and from it conclusions are drawn respecting the method of establishing a suitable ventilation in the totally different circumstances of an ordinary room. The ascending force of a column of warm air depends, we know, upon three particulars:—The height of the column, the size or area of its base, and the excess of its temperature above that of the colder air which is to displace it. The height is to be measured from the level at which the cold air is coming, in to that at which the warm air is going out. The base is, of course, not to be measured by the area of the largest section of the ascending air, as, for instance, by the size of the building, but merely by the size of the holes or doors kept open for letting in air. As to the third particular, the superior temperature of the air, we must bear in mind that air only expands about one five-hundredth\* part by each degree of heat of our scale. One five-hundredth of so small a weight as that of a column of air of the height only of a building is a very small force. Hence, for any considerable effect, we must have a great difference of temperature, or, to make up for it, a very lofty

\* It is well known, as first shown by Sir Isaac Newton, that air, contrary to what might be supposed, is also rendered lighter by becoming charged with watery exhalations, provided the vapour is in a perfectly transparent gaseous state. But though this should not be overlooked in philosophical inquiries, or on the larger scale of nature, is in quite a mistake to consider it worthy of notice as a power for giving buoyancy to the air of our rooms.

\* i.e. one-four-hundred-and-eightieth, according to Dalton, De Luc, and others.



column ; or if the column is not lofty it must have a large base : but none of the three should be very deficient. Thus in the case of a theatre, in which this kind of ventilation acts with greatest power, the considerable height of the column, perhaps from sixty to ninety feet, gives the best effect which a building admits of to the other two particulars, namely, the buoyancy of the inner atmosphere and the area of its base. When the outer air is at  $40^{\circ}$ , the inner may rise to  $80^{\circ}$ . This difference of forty degrees, with the above height, would ensure a pretty large ventilation, if the base, or inlet of air, were also considerable. But this very fact of the high temperature within is caused by the comparative smallness of the base or inlets for air which the suffering of persons by the draught causes them to close. With the aid of the height, however, the buoyancy from heat produces a sufficiently striking effect in creating a rise of air from below to deceive many into thinking it a sufficient and proper power to rely on for the ventilation ; whereas they forget that this force, such as it is, is mainly dependent upon the very evil to be remedied—a most deficient ventilation, which causes the high temperature giving rise to the buoyancy. Let us now suppose the feelings of those near the door-ways and draught-holes to be disregarded, and these to be opened freely for air enough to come in to relieve the oppressive heat, so that the temperature shall descend to  $60^{\circ}$ , half the ventilating power will then be lost ; and when the air outside is at  $50^{\circ}$ , which is near the mean temperature of our climate, there will be only ten degrees of difference between the outer and inner air to depend on for establishing the buoyancy of the air within the building. A difference of ten degrees would not be near enough to ensure the supply of air required to produce so comfortable an atmosphere, and the consequence is, the heat would rise, or rather it never would have fallen to so pleasant a point, but would have remained at a higher degree, since the buoyancy would not suffice for causing air to press in quickly enough to reduce the heat so far. Hence it has been found necessary to aid the ventilation of such buildings by the heat of large lights near the ceiling. Such is the defective action of a ventilating system dependent on the buoyancy of the air in the building, even in a theatre,

where the loftiness gives it the utmost effect. Let us see how it acts in a dwelling-room, as in the case proposed above with the chimney closed. Here we have a height, not of eighty, but commonly of ten or twelve feet, and a temperature which it is agreed on all hands should not be much above  $60^{\circ}$ . With respect to the base or apertures for letting in the colder air, people may write about having them near the bottom of the room, and sufficiently free, but in practice we cannot endure any such apertures in the lower parts of our rooms, if the air let in is cold. Then, as to the height of the column ; we must not suppose that we can command the effect of the whole height of the room, small as that is, for, somewhere below the mid height, air will be coming in ; and, somewhere above it, air will be going out. In a room, then, ten feet high, we cannot fairly calculate on a column of more than six feet : but I will concede the possibility of commanding the effect of the whole ten feet, though it is not realized in practice.

Now with the outer air say at  $45^{\circ}$ , while the inner is  $60^{\circ}$ , we have here a difference of fifteen degrees, each of which gives a buoyancy to the column of one five-hundredth part of its height. We have then a force of fifteen five-hundredths of a column ten feet high, the base of which is to be estimated by the amount of the crevices which let in air. Willing to grant the utmost to our opponents, having given them a height they could not really command, let us give them an unusual base, and instead of crevices, let us suppose there were ten holes admitting air of four square inches each, and let us suppose the window to be opened freely at top to let the air out. Even with this considerable base, the whole ventilating power of the room would only amount to about forty grains—a force ridiculously small for the ventilation of a drawing-room or office. We may here observe how expedient it is, before undertaking to form a judgment upon such a question, and especially before we undertake to guide others, that we should dive to the bottom of our subject, instead of perpetually hovering, as it were, about its surface, in a mist of vague generalities.

If the buoyancy of expanded air is to be given any real effect as a ventilating power in our climate, in which



we cannot make the base and summit of the column large by throwing open our doors and windows, we must discard the thought of depending upon the ascending force merely of the air within our rooms. Instead of the trifling height given by any room, our ascending column must be contained in a lofty flue, made for the purpose by the side of each room, as many times its height as circumstances admit of, and communicating freely with it. It ought not be of metal, but of some other strong material, which, being a slow conductor of heat, will retain it better, and not combustible. Such a material is brickwork. In this way we may command the important element, height, for our buoyant column. As to the area of our flue, it should be larger than the utmost collective inlets for the air to our room, as from six to twelve inches square, or more, according to circumstances. With respect to the third element, the heat of our column of air, we have seen how little buoyancy one degree confers on air: its temperature must, therefore, be far above any that it would be wholesome to live in; which is another reason why the column, on the buoyancy of which the ventilation is to depend, must not be the air of our room, which ought not much to exceed 60°. We must, therefore, have some means of heating the air while it is passing from our room into the flue, to at least 100°; not hesitating if necessary to consume fuel solely for this purpose: but if we can so contrive matters that the fuel which heats our ventilating flue shall, at the same time, warm our room, we shall have gone no small way towards attaining the most perfect system that human ingenuity could devise. What, then, have we before our view but the Englishman's open chimney, with his open fire? What is the system to which we are led by an inquiry, upon which we may challenge controversy, but the very one, as to the most essential particulars, which our forefathers have handed down to us, but which we are called upon by some recent authors to lay aside? It may be said that they were directed to its choice by no such scientific views; that they were, indeed, ignorant of the very existence of air as a material substance. Though this should be granted, it does not at all affect the fact: they have

given us the chimney and open fire; and the open fire and the chimney are exactly what we need. It may be, and is, indeed, true, that the instrument, the grate, in which we commonly burn our fuel, is of a very defective construction, and unnecessarily wasteful of it. It is also true, that in having no especial provision for the admission of air to our rooms, and in allowing it to force its way in cold, without, in general, any attempt to warm it first, our system is very incomplete. But these are distinct questions, to be handled separately. Let us not confuse our subject with them, and condemn that which is excellent, as far as it goes, because it is not complete.

[To be continued.]

## RHUBARB AS AN APPLICATION TO ULCERATED SURFACES.

*To the Editor of the Medical Gazette.*

SIR,

If the following case is of sufficient interest to obtain a place in your valuable journal, you will oblige me by inserting it.—I am, sir,

Your obedient servant,

ALFRED MARKWICK.

North Brixton, July 18, 1842.

While externe at the Male Venereal Hospital, Paris, under the justly celebrated and much lamented M. Cullerier, who died some few months since of acute hepatitis, a patient was placed under my care, who had already been an inmate of the hospital upwards of two months, for severe and extensive ulceration of the abdomen, occupying the whole of its right side and greater part of its left. The right wrist was also much affected. He had unfortunately inoculated it from the abdomen. Almost every plan of treatment had been adopted; even the actual cautery had been applied three times, but without producing any arrest to the progress of the sloughing. At the time I entered the hospital he was much emaciated; his face was expressive of great suffering and despair; he had no appetite; his spirits were very bad, so much so that he would sometimes cry like a child; and he passed restless nights. The application that was then used was a combination of bark and camphor, which was sprinkled lightly over the parts. I continued this for rather

more than two months, and he took at the same time sarsaparilla and iodide of mercury; but he derived no benefit: indeed he became still more emaciated, and he had a perfectly sanguineous appearance. I then suggested to M. Cullerier the employment of the powdered rhubarb. To this he readily consented; and the following morning it was applied, but only in very small quantity, on account of the violent irritation it produced. Over this was placed some linen with holes cut in it about a quarter of an inch apart (*linge troué*, as it is called by the French), which was covered with charpie. On removing the dressings the following morning, a decided amelioration was perceptible. The wound had assumed a much more healthy character. M. Cullerier advised some camphor to be added to the rhubarb, in order, if possible, to mitigate the pain occasioned by the application. This was done; but it had not the desired effect. The powder was then only applied every other day for about six weeks, when the ulcers had nearly healed. His appetite, spirits, and appearance, daily improved, and in about a fortnight afterwards he was able to leave the hospital quite recovered. This patient had remained in the hospital four months without obtaining any relief to his sufferings. Six weeks were sufficient to produce cicatrization of nearly the whole ulcerated surface with the rhubarb—a fact which I think sufficiently proves the efficacy of the drug in sloughing venereal ulcers.

The patient had had no return of the disease when I saw him six months afterwards.

#### CASE OF NÆVUS MATERNUS.

*To the Editor of the Medical Gazette.*

SIR,

As *nævi materni*, though common enough in the practice of consulting surgeons, are comparatively seldom met with by the general practitioner, especially by the junior part of this class, it appeared to me that the following case might prove acceptable to some of your readers. If you should be of the same opinion, I trust you will oblige me by inserting it.—I remain, sir,

Your obedient servant,

ALFRED LORD.

Islington, July 21, 1842.

On the 9th of April last a gentleman residing in the country brought his infant to town for surgical advice. The child was a boy of nine months old, very healthy, fat, and strong. When I first saw him my attention was directed to a *nævus* seated over the middle of the sternum, of the size of a half crown piece, button-shaped, raised by a pedicle four times smaller than its surface about a quarter of an inch from the skin, apparently consisting of erectile tissue, very vascular, and of a dark purple hue. During crying it became unusually distended: by pressure it could be nearly emptied of its blood, and when grasped with the thumb and finger might, with the surrounding integuments, be drawn a considerable distance from the sternum. It was first observed two months after birth, and was then very small, but had rapidly increased in size during the last two months. There were also two very small ones upon the forehead.

The opinion of many medical men in the country had been taken upon his case, all of whom considered the destruction of the *nævus* essential, but differed as to the best means of effecting that object. It was therefore deemed advisable, amidst conflicting opinions, to apply to Sir Benjamin Brodie, and leave the case in his hands.

I accordingly accompanied the parents to Sir Benjamin's on the 12th of April. He agreed with all who had previously seen the child as to the propriety of a speedy removal of the *nævus*, considering, from its great vascularity and rapid growth, that ulceration would soon take place, and life be endangered by hæmorrhage. As it appeared perfectly cutaneous, Sir Benjamin preferred removing it by ligature rather than by the other methods. He, therefore, performed the operation in the following manner:—A hare-lippin was passed through the integuments, entering on one side at a quarter of an inch from the *nævus*, passing under it, and emerging at a quarter of an inch from the *nævus* on the other side. A second pin was then introduced in a similar way, so as to form a cross. A strong ligature, formed of silk cord, was then tightly and frequently wound round beneath the pins, the ends being forcibly drawn together every time they met, and, after several rounds, secured by a knot. The *nævus* was

then punctured with a lancet to relieve the tension, which finished the operation. The child suffered considerably during the operation; but in the course of half an hour after was quite easy.

After the lapse of a week, the nævus sloughed off, leaving a sore of considerable depth, and of the circumference of half-a-crown, in the centre of which there existed a few points of a suspicious character, which Sir Benjamin washed freely with nitric acid. Another week passed before the slough caused by the acid had separated, after which we discovered that several roots of the nævus, apparently deeply seated, had shot up under cover of the slough. The chloride of zinc applied on lint was now had recourse to. In a few days the slough came away, when the same points again presented themselves. On this occasion Sir Benjamin used a stick of the caustic potash cut to a point like a pencil, which he passed freely and often into each root, working it well about, and going as deep as the sternum. This we hoped would prove effectual; but, after the interval of a few days occupied with the sloughing process, we found our old enemy again rearing his hydra head as vigorously as ever. Sir Benjamin now determined to use the nitric acid by means of the glass pen, which, having first dipped into the acid, he passed into every root, working it about freely so as almost to detach the roots from the sternum, from which it appeared clear they were growing. I should here state that when the acid was applied the surrounding skin was protected by being washed with a solution of the bicarbonate of potash, which immediately neutralized any acid that might come in contact with it, and thereby, of course, rendered it innocuous. At the end of another week the slough again came off, when we were enabled to pronounce the destruction of the nævus complete. A portion of the periosteum of the sternum had been destroyed, the denuded bone grating against the probe when introduced, which, whilst it rendered the cure more certain, produced a new cause of anxiety from the fear of exfoliation. The child remained in town a fortnight after this, during which time the sore made no progress towards healing, owing to his health being much impaired by the combined effects of his

treatment, teething, slight affection of the lungs, and want of country air. He was therefore allowed to return home; and at the expiration of another fortnight I had the gratification of seeing him in the country with the wound perfectly healed, and his general health restored.

The non-exfoliation of bone after the destruction of the periosteum may, I imagine, be attributed to the great vascularity of the sternum, especially at so early an age, which rendered it capable of maintaining its vitality and reproducing the periosteum.

The two small nævi on the forehead I readily destroyed by puncturing them with a glass pen having on its point a very small drop of nitric acid, which induced inflammation and consequent ulceration.

This case proves, in a striking manner, the great importance of removing these growths at an early period. It also shows how little dependence should be placed upon the moveableness of such tumors as a sign that they are not deeply seated, as there can be no doubt that in this instance the nævus was attached to the sternum, though it was capable of being freely raised from it with the surrounding integuments; this power of being moved most probably depending upon the elastic nature of its roots.

With regard to the origin of these tumors, they are generally, and I presume rightly, looked upon as in no way symptomatic of a faulty constitution, but considered to be merely accidental occurrences, owing to the weakness of the vessels of the part. Still there must be a cause for this weakness; and I would suggest whether it may not be found in the deficient arrangement of the cellular membrane, by which the minute vessels are deprived of their due support.

Perhaps, whilst on this subject, I may be allowed just to glance at the various methods recommended for curing this troublesome affection.

1. Pressure and cold applications, as suggested by the late Mr. Abernethy.

2. Vaccination performed in the nævus, as recommended by Mr. Hodgson, of Birmingham, which has been found to be very successful by inducing inflammation and ulceration, and consequently altering the structure of the part. In the case just recorded the

child had been vaccinated before the discovery of the nævus.

3. Injecting with nitric acid, as practised by Mr. Lloyd, to produce adhesive inflammation.

4. Passing a needle several times through the substance of the nævus, as adopted by Dr. Marshall Hall, with the same view.

5. The use of small threads as a seton, as originally employed by Mr. Fawdington and Mr. Macilwain, and strongly advocated by Mr. Curling, of the London Hospital.

6. Destruction by the various caustics.

7. Removal by ligature, as in the present instance.

8. By excision.

Pressure and cold will seldom be found to be more than a palliative means. The knife is rarely resorted to, owing to a well-grounded fear of hæmorrhage. The other modes alluded to will be found more or less desirable, according to the size, seat, and nature of the nævus. I lately met with one upon the lip of an infant, which was cured by injecting nitric acid into its structure. In this situation most of the other means would have been out of the question.

There exists generally in the minds of medical men a very strong objection to the ligature, owing to the pain and irritation it is supposed to cause. This objection, which I at one time entertained, appears to me to be ill founded, as in the case I have just given all pain ceased after the lapse of half an hour, and no subsequent irritation was induced.

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#### ANALYSES AND NOTICES OF BOOKS.

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“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

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*Memoir of the late James Hope, M.D. Physician to St. George's Hospital, &c. &c.* By MRS. HOPE. *To which are added, Remarks on Classical Education, by Dr. Hope; and Letters from a Senior to a Junior Physician, by Dr. Burder.* The whole edited by KLEIN GRANT, M.D. &c. &c. 1842. 12mo. pp. 358.

THIS is a very agreeable and amusing biographical sketch of the late Dr. Hope; and although it proceeds from

a source that might naturally be suspected of partiality to his memory and reputation, we perceive in it no “touch of overweening adulation”—no more eulogy, in fact, of his character and talent than his professional brethren, and all those who knew him, would have awarded him while living. By one class of readers we think it will be perused with great interest and instruction, namely, by those who are yet to fight their way to fortune's favours as practitioners of medicine, and who have nothing to rely upon but their own ability and perseverance. It is well known that Dr. Hope had attained a degree of eminence and an extent of practice, as a physician, which few can boast of at the early age that he acquired them. For his success he was indebted neither to any uncommon and fortunate accident, nor to the patronage of the great and influential. He won it by the fair and honourable exercise of his talent and unwearied industry, in the pursuit of professional knowledge. That he was not, however, the slave of professional ambition, that he gave both time and thought to other and still more important duties, is proved by the sketch which is here given of his fervent piety—his scrupulous observance of his religious duties.

Having finished his general education, during the course of which Dr. Hope had already displayed much more than average talent and industry, he was disposed to fix on the bar as his future profession. His father, however, proposed to him to become a physician. To the medical profession he had always felt the strongest dislike. At length, however, he yielded, but upon one condition—that he should be allowed to practise in London. He commenced his studies in Edinburgh in 1820. His first year was principally devoted to anatomy, and “was to him one of disgust and unhappiness, from the extreme repugnance he felt to the pursuit.” He seems to have fought hard to conquer this dislike; still he compelled himself to the diligent and persevering study of anatomy; but he dissected in gloves and with forceps, so as never to touch the body. To yield to that which was merely disagreeable to his personal feelings formed no part of his character. At Edinburgh, Dr. Hope, we are told by his biographer, “was distinguished from



from his fellow students, and admitted to the best society."

In 1826, Dr. Hope studied surgery in London, under Abernethy and Lawrence, and afterwards he visited Paris, where he laboured hard and successfully in cultivating a knowledge of morbid anatomy, in which he was greatly assisted by his skill in drawing and painting. Having made a tour of the continent, Dr. H. returned to England in 1828. He was now to "set up" in his profession. Before he took this important step, he had the advantage of the following advice from his father, who had a supreme contempt for the medical profession:—"1st. Never keep a patient ill longer than you can possibly help. 2dly. Never take a fee to which you do not feel yourself to be justly entitled. And, 3dly. Always pray for your patients." A short time before his death, Dr. H. said that these maxims had been the rule of his conduct, and that he could testify to their success.

His preliminary studies being completed, and the above rather eccentric parting advice received, Dr. H. fixed upon London as the scene of his future career. This, indeed, had always been his determination, and he adhered to it, although many such attractive and promising offers were made to him of settling in other places, that one less ambitious of metropolitan distinction, and less confident in acquiring it, would scarcely have declined. The sole advantage which Dr. Hope possessed in settling in London lay in his natural powers of mind, and his superior education. As he had not taken his degree at an English University, he was not a Fellow of the College of Physicians, and at that time this seemed a formidable barrier to the attainment of various appointments.

To attain the great and difficult object of bringing himself into notice as a physician, Dr. H. determined upon the publication of the results of his previous studies. He had long planned two works, viz. a *Treatise on Diseases of the Heart*, and a complete work on *Morbid Anatomy*; and for the completion of these works he allotted seven years. He continued his studies with unabated zeal at St. George's Hospital, for the purpose of maturing his knowledge of diseases of the heart. The

work, when published, was very favourably noticed by all the principal reviews, and his analysis of the sounds of the heart was pronounced to be one of the greatest accessions which the science of auscultation had received since the death of Laennec. The great interest that has been felt upon this subject is proved by the various papers published upon it in this and other journals. This work was translated into German by Dr. Becker, of Berlin; it passed through several editions in America; and even found its way into Italy, a country where the medical literature of other nations is little cultivated. His work on morbid anatomy was published in 1832.

From the publication of the *Treatise on Diseases of the Heart*, Dr. H.'s reputation became widely spread, and from this period may be dated the commencement of his practice. He was shortly, too, appointed assistant physician to St. George's Hospital, when he resigned the office of physician to the Marylebone Infirmary, which he had previously held.

On arriving in London, Dr. Hope was led into the belief that the first twenty physicians of the metropolis divided about £80,000 annually between them, and that a successful physician might hope to be established in good practice in about five years. To be one of so large a number as twenty seemed no difficult task, and therefore "he ignorantly hoped" that if he succeeded at all he should be making £4000 a year in about five years! He was, of course, quickly undeceived. He had now gained many friends, he was married, he was a successful author, but the approaches to £4000 a year were "very tardy." He thought himself in fault, until a little friendly conversation with Dr. Chambers and Sir Henry Hallford taught him more correctly upon the subject of so speedily stepping into large receipts. Dr. Hope kept a regular account of every fee which he received during the twelve years he was in London. "We are, therefore," says the Editor, "enabled to speak with the greatest accuracy." The first two years he was in London he made £200 a year. The third year, the accidental removal of some families who employed him reduced his practice to £150. At the end of the third



year his work on the Diseases of the Heart was published, and he came before the profession as physician to the Marylebone Infirmary. Still, in the first year after, his practice was little increased; but from this period his reputation became extended, and his practice gradually increased, until in eight years more, when he retired, he was making £4000 a year. This—as we should call it—great success, was fairly and honourably laboured for, and won.

In July 1839, Dr. Hope was elected physician of St. George's Hospital, to which event his biographer attributes his early death. "But what (it is asked) was the price that he paid? It cost him no less than life!" We believe this to be a mistake, because he had a short time before been attacked with spitting of blood. The fatal nature of the disease was not long a matter of doubt, and, at the early age of 40, Dr. Hope died of pulmonary consumption.

Besides the works we have mentioned, Dr. Hope published in this and other journals, and in Cyclopædias, many very interesting and able articles. That he was very highly respected by his professional brethren for his medical talent is well known, and the present biography shews that he possessed strong claims to the esteem of all for his moral worth.

## MEDICAL GAZETTE.

Friday, July 29, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## ON THE STUDY OF LUNACY.

IN our last number we offered some observations on the study of lunacy, in reference to the pamphlet of Dr. Webster, proposing that the wards of Bethlem and St. Luke's Hospitals should be thrown open to medical students, and made available to the instruction of young men in an important class of diseases, which have been hitherto much neglected, from the dif-

ficulty of obtaining information regarding them. We expressed our agreement with the author on the main points which he brings forward, though, on one or two questions, we ventured to hazard a different opinion. To such a scheme we must expect that many objections, of more or less weight, will offer themselves. Of its good effect, in various ways, if brought fairly into operation, little doubt can be entertained; but the apprehension naturally arises that, by introducing such an alteration as the one proposed, the benefit which these institutions are at present effecting may be diminished, and their present utility sacrificed, in the endeavour to render them subservient to another purpose.

It is said that the primary object of these institutions being to promote the *recovery* of persons afflicted with mental diseases, it is by no means desirable to diminish their agency in this respect, by opening their wards to the admission of a crowd of students, whose presence will excite the patients, and tend to impede their cure. If founded on good grounds, this would doubtless be a just and powerful argument. These hospitals, in their present condition, are truly valuable institutions. The fact that about 300 patients are annually discharged, more or less relieved, from Bethlem, is a sufficient reason for desiring to secure their present advantages. And we cannot be surprised that it should be deemed uncharitable and unwise to propose any thing which may interfere with them. We should, indeed, be the last to advocate the introduction of any new system, which appeared to involve the risk of detracting from the important office they at present fulfil—that of rendering assistance to so large a number of our suffering fellow-creatures.

But a little reflection upon the real nature of the question will shew that

it is not the tendency of the proposed plan at all to diminish the utility of these institutions, by lessening the number of cures performed in them. We shall find the statement, that the admission of students into the hospitals for the insane would retard the recovery of the patients (we speak of the generality of the patients), to be an assumption arising out of an imperfect acquaintance with the subject; but appearing in great measure unfounded when brought to stand the test of argument and experience. Dr. Webster, in the pamphlet alluded to, endeavours to combat this opinion, and even states his belief that, "so far from imagining that the judicious admission of pupils, and young men who are about completing their preliminary studies, to the wards of Bethlem Hospital, would prove injurious to the inmates, such permission, if properly regulated, would act most advantageously. This opinion is founded on the supposition that the regular visits of physicians, although accompanied by pupils, would, in the case of most patients, tend rather to distract their attention from false reasoning, and in others would appear as if bringing them again into contact with the external world; thereby producing a more favourable effect upon their disordered imaginations." Dr. Combe, of Edinburgh, in a letter to Dr. Webster, also observes, that, having devoted much attention to insanity since 1819, every day's experience has added to his conviction of the propriety, even for the sake of the patients, of admitting pupils to our asylums under proper regulations.

Taking the instance of other hospitals, it may be said that ordinary patients of all classes and sexes object, in some measure, to have their maladies made the subject of such general scrutiny as they there undergo; and the excitement attending it might be thought

prejudicial to their recovery. Nevertheless, in these institutions such objections are waved; and no one will deny that the attendance of students in them is, in many ways, advantageous to the patients, leading to a more accurate investigation of their cases, and consequently to a more effectual mode of treatment, and a better relief to their necessities, than could by any other means be obtained. We will not say that the two sorts of institution are to be regarded in an exactly parallel light, or that the same degree of benefit is to be anticipated from the services of pupils in hospitals for the insane; but we may infer that the advantage which is so conspicuous in the one instance will, to a certain extent, be found in the other. At least, we may fairly assume that the slight injury, which might be occasionally suffered by a few patients, would be more than compensated by the benefits which would, in different ways, result to others from the attendance of a more numerous body of students.

There are, doubtless, some patients whose peculiar state may render them liable to suffer from the excitement occasioned by an increased number of pupils; but they are not very many, and could be kept in separate apartments, to which the students should be admitted only by the express permission of the attending physician. By the majority we need not apprehend that any ill effect would be experienced. At any rate we cannot suppose that the admission of students, under proper regulations, would be more injurious than the promiscuous assembly of visitors, who, in parties of twenty or thirty, are daily parading the wards of Bethlem Hospital: and if the latter be allowed to go round for the mere purpose of gratifying idle curiosity, no strong reason can be urged against ad-

mitting the former, with the important object of enabling them to administer relief to the unfortunate sufferers who may, at a future period, fall under their charge.

The best evidence that can be taken as to the effect which the admission of students into asylums would have on the patients, is afforded by the results of the plan pursued in some of the continental hospitals, in which we find the strongest argument in its favour, and the best answer to the objections opposed to the adoption of a similar system in England. "Throughout the Austrian dominions," says Dr. Webster, "every hospital for the sick is made subservient to the instruction of medical students. At the Salpêtrière in Paris, pupils are freely admitted; and the late M. Esquirol frequently lectured to as many as fifty auditors, whilst some of the patients were even brought before his pupils, for the express purpose of illustrating the various forms of this distemper, and the particular points alluded to by the lecturer." That this practice has been attended with no inconvenience to the patients, except perhaps in a few rare cases, we have abundant evidence in the records of these hospitals, as well as from the testimony of numerous persons who have visited the continental schools. Instead of confusion or excitement being observed from the indiscriminate admission of pupils, Dr. Combe tells us that the patients seemed amused and interested; and during three months he never saw one instance of excitement or other unfavourable result. On the contrary, the visit of M. Esquirol, who generally went round with from thirty to fifty students, was expected with pleasure by many. It cannot, therefore, be said that the present proposal would introduce any thing which hazards the welfare of the patients: it

being shewn, by the best evidence which the case admits of—namely, by reference to the operation of the same system in other parts, that it has a tendency rather to expedite the cure than to retard the recovery of the sufferers.

We do not wish to see the wards of Bethlem and St. Luke's crowded with students; neither does it appear that there is any reason for apprehension on this ground. Unless the attendance of practice in an institution for the treatment of the insane be rendered a necessary part of medical education (and we doubt the probability, or even the propriety, of its becoming so), the numbers of students who will have the opportunity or inclination to devote their time to the study of this subject will not be so great as to occasion inconvenience, especially if they be distributed over two or three large institutions. The period allotted for their education is already too fully occupied in obtaining information on the extended course of study which is required of them, to enable many to prosecute other studies, and to attend the practice of hospitals for separate diseases. It could be only a certain proportion of pupils, whose circumstances admitted them to employ a longer period than ordinary in pursuing their education, who would be able to embrace the opportunity offered of studying insanity in an hospital appropriated exclusively to patients suffering under that disorder.

It is scarcely to be supposed that poverty will be pleaded as an excuse for delaying the improvement of an institution, whose revenues, derived from numerous sources, are so large as those appertaining to Bethlem Hospital. On the contrary, when we consider the immense sums which have been bestowed upon it by subscription, as well as the grant of upwards of

£72,000 which it has received from government, and the annual stipend which the country pays for the support of criminal lunatics, may we not say that the public and the medical profession have some claims upon the governors of this asylum to render it as extensively useful as possible, and not to confine its benefits to the patients within its walls, but to enable others to participate in them, when this can be effected without detriment to its inmates? At any rate, it is the duty of the governors to make the proposition which has recently been brought before them a subject of careful consideration, and to weigh cautiously the arguments which have been adduced in its favour; that their inattention to the subject may not be a cause of the continuance of the present impediments to the study of lunacy, and that the public may no longer be deprived of the advantages which must necessarily follow from the proper cultivation of this branch of medical science; unless it be clearly shewn that to render the asylums for the insane available for instruction would be incompatible with, or detrimental to, the other important objects of those institutions. It was evidently the intention of the early founders, and should be the aim of the present governors, to render these hospitals not merely a means of promoting the convalescence of their inmates, but also beneficial to the public at large, by affording the opportunity to medical men of obtaining a knowledge of insanity. This, as we have before stated, was the sentiment expressed in the original address in St. Luke's, in 1751—"To introduce more gentlemen of the faculty to the study and practice of one of the most important branches of physic." And we cannot see why this important object of the charity should remain any longer disregarded, and the public be

deprived of the advantages that would succeed to a proper fulfilment of it.

We hailed with pleasure the intention of Dr. Conolly to give lectures at the Hanwell Lunatic Asylum, as highly creditable to himself, and as a step to promote education in an important and prevalent class of diseases, among the rising members of the profession. We wish that his example may be followed by the medical officers of other establishments for the insane. But we are, at the same time, fully convinced that we cannot expect the knowledge of the profession on this subject to be materially improved, till the fountain-head of information, the hospitals wherein diseases may be observed and compared, are more freely opened, and made more subservient to the instruction of students.

We have been induced to say thus much, and to speak thus strongly, on the present subject, from a feeling of the importance of it, and from the consciousness of the great boon that would be granted to those who are engaged in the study of the profession, by permitting them to acquire a practical acquaintance with mental diseases, as well as the great benefit which would be derived by the public from the more general knowledge of them by medical men. We are glad to learn that the proposition made by Dr. Webster was favourably received by many of the governors of Bethlem Hospital, and we may entertain the hope that, before very long, more liberal terms of admission at that institution will be granted to students. There may be a few objections in the way of it, which will lead some persons to resist the innovation, but we have endeavoured to show that the most influential one, arising from the idea that the presence of pupils will be injurious to the patients, is, in great measure, unfounded; and if once the great principle which

we advocate be granted, we feel sure that the difficulties attending the operation of its minor details will very speedily be overcome.

### PROVINCIAL MEDICAL ASSOCIATION.

WE beg to remind such of our readers as are members of the Provincial Medical and Surgical Association, that the meeting for this season will take place at Exeter, on Wednesday and Thursday, the 3d and 4th days of August next.

### MEDICAL REFORM.

*To the Editor of the Medical Gazette.*

SIR,

IN a former number of your GAZETTE, I endeavoured to point out those divisions of the medical profession which, arising out of the nature of our occupations, or out of circumstances connected with its adaptation to the public wants, seemed best calculated to promote the welfare of the profession and the public good.

These divisions I stated to be fourfold—three arising out of the nature of our occupations: 1. The pure physician; 2. The pure surgeon; 3. The pharmacist. The fourth division arising not out of the nature of our profession, but out of its application to the public service: 4th, The general practitioner.

I very slightly inquired how far the existing institutions meet the necessities of the case. It was found upon very superficial inquiry, that the College of Physicians, the only corporate body which can be said generally and to any extent to license physicians, however excellent in itself, had, from a want of more extended power and charters, been virtually inefficient, inasmuch as more than one-fifth perhaps of practising physicians had never required its license.

It was found that the College of Surgeons, although holding together a far greater number of persons, and therefore far more efficient than the College of Physicians, laboured under the want of a two-fold classification of its members, by which the public might be assured whom they might best trust as operating or consulting surgeons.

As to the pharmaceutical part of the profession, this was found to be represented very unnecessarily by two classes of persons—the apothecary, who has very properly and very naturally got above his business in these enlightened days, and the chemist, who,

however he may be skilled in the knowledge of his art, is of no public incorporated body, and has therefore no diploma to testify to his abilities, or protect him in the exercise of his calling.

It was shown that the general practitioner as at present constituted, however well qualified for his duties, laboured under some disadvantages, arising from the peculiar constitution of the bodies corporate to which he is attached.

Any plan of medical reform must of course be far too complicated in the minutiae of its details to be clearly and entirely developed by one unacquainted with legal technicalities. My views of this subject must, therefore, be considered but as a sketch, and having stated these views, I shall take the liberty of making a few observations upon medical education, and other subjects intimately connected with the medical profession; and I shall endeavour to point out some of the anomalies in its present state which, as it appears to me, would be removed by such a system of reform.

Stability will most attend that reform which, being effective in itself, is carried out with the least shock to existing institutions. I am decidedly of the number of those who consider that two at least of our medical corporations should remain in existence, their powers and charters being extended to meet the necessities of the case. I cannot myself see either the necessity or utility of establishing a University of Medicine, as some have proposed, and with due deference to their opinions I would say that such views are not in accordance with the real nature of a University. Universities are, properly speaking, a kind of finishing school, in which the pupils are taught those general principles of knowledge which may best adapt their minds for the learned professions; leaving it for these professions themselves to be the teachers of their own art, and the judges of the qualification of candidates for admission into their lists. The check of the University is this:—"We find A or B a dissolute character; we dismiss him from the university on account of his bad conduct." A or B then is debarred the power of entering either of the learned professions, not being able to show a university qualification. Or again, C or D may have shown themselves so grossly ignorant or idle, or both, as to have failed to pass the University examinations. C or D are therefore debarred the power of entering either of the learned professions; and most properly so; for if their ignorance or idleness were such as to disqualify them for their University degree, they are clearly unfit for that higher branch of studies which not only requires to be learnt but to be applied. Such is the nature of a university.



What it appears to me is required in the medical profession is this :

A College of Physicians.

A College of Surgeons.

A College or Society of Pharmacy.

The College of Physicians should confer two kinds of diplomas :

To the Fellow.

To the Member.

The College of Surgeons should confer two kinds of diplomas :

To the Fellow.

To the Member.

The *Fellow* of the College of Physicians should constitute the pure physician, and should be alone eligible to be a teacher in medicine, or to hold the office of physician to any public institution.

In the same way the *Fellow* of the College of Surgeons should be alone able to teach his profession, or to be surgeon to a hospital, &c.

The *Members* of the Colleges of Physicians and Surgeons should constitute the general practitioners. It should not be enough that a person be a *member* of either one of the Colleges ; he must be a member of both to practise as a general practitioner\*.

Besides the powers of granting diplomas, the Colleges should have the power of protecting persons in the enjoyment of their diplomas, by fining and otherwise punishing persons who should attempt to practise without such qualification. They should also have the power of punishing such of their own body as, having obtained their diploma, may yet have conducted themselves with impropriety.

By this apparently simple process are provided physicians, surgeons, and general practitioners ; and we now arrive at the department of pharmacy, and here, as it appears to me, an entirely new arrangement is required.

A College or Society of Pharmacy should be instituted. As the calling of the pharmacist approaches more nearly to that of a trade than a profession, it is not necessary that its members should be divided into two classes. Besides having the same stimulus to exertion as falls to the lot of other trades, they will have the additional one of the honour conferred by being raised to the council or board. For it would be required that they should have a board or council, out of which a certain number should be selected annually as examiners. The office of the examiners would be to ascertain the qualification of candidates for diplomas. The board or

council would have to superintend such of the affairs of the corporation as may properly come under their consideration. They should be further required, from time to time, to examine and report upon the qualities, &c. of such drugs as are offered for sale by their members, whether provincial or metropolitan.

As the Pharmaceutical Society must in its very nature be essentially connected with, nay even dependent upon, the medical practitioner (inasmuch as to them it belongs to prepare the remedies ordered by the medical man), it would be desirable that the president of their body should be elected from out of the fellows of the College of Physicians, and that a definite proportion of their council should also be selected from out of the fellows, and perhaps members of the Colleges of Physicians and Surgeons.

It would be desirable that the Pharmaceutical Society should strictly adhere to its calling, and not mix up with it (as is at present done) the selling of paints, oils, grocery, and other wares. This may at first sight appear a difficult matter to accomplish, inasmuch as some may suppose that so limited a trade would not afford an adequate subsistence. When, however, it is considered that by the proposed change in the medical profession the sale of medicines would almost exclusively devolve upon the pharmacist, such a doubt will, I think, vanish.

One question of doubt arises here ! Should the pharmacist be allowed to enjoy the privilege of counter practice ? I confess this is a question of some difficulty. It may seem hard that Molly Giles, having a stomach-ache, may not go into the shop of Mr. Brown, pharmacist, and, having explained to him the nature of her torments, receive from him the soothing and cordial balm of a cup of peppermint-water, with a little rhubarb and magnesia : and hard it certainly would be.

It would be easy, under a system of medical reform, to prevent the chemist from visiting patients at their own houses, which is now but too frequently done. This would effectually prevent their taking charge of the great bulk of more serious and complex cases ; and, perhaps, some check would be placed upon their too indiscriminate counter practice, by adopting a rule respecting them which I shall take an occasion of mentioning when I come to speak of unauthorized practitioners. It must also be taken into consideration that, with the altered nature of the medical man's occupations, he will have more leisure to attend to these minor ills of nature ; which will render counter practice less excusable in proportion as it is less necessary. Neither must it be forgotten that the relative position of the pharmacist and the medical man will be rendered more

\* As a very easy and simple way of preventing fraud or deception in this case, it might be arranged that, if Mr. A. first presents himself at the College of Physicians as a candidate for member, his examination should be registered as having been satisfactory, but his diploma withheld till he had also passed the College of Surgeons, when he should receive their united diplomas.

friendly. If, therefore, Mr. Brown be in doubt whether he should give five grains or a scruple of rhubarb, he will not hesitate to recommend his poor friend Molly Giles to the friendly assistance of some neighbouring doctor; well knowing that he will be equally well paid for his draught whether it be of his own or the doctor's prescribing. Under the present system, his profits—nay, even his reputation—are, in some measure, pitted against those of his neighbours—the surgeon-apothecary.

It may be said that many a general practitioner of the present day could not possibly obtain a livelihood, without that additional profit of his calling, derived from the selling of medicines. How, then, is this case to be met?

First, it must be remembered that when the apothecary's practice has been sufficiently extensive to require the assistance of a dispenser, his expenses will be materially diminished under the proposed system, by his no longer requiring such assistance. In all cases, the expenses of the general practitioner will be in some measure decreased by his ceasing to keep drugs, and to sacrifice a large portion of his house-room to his now misnamed "surgery." But the greatest saving will be effected in his time. The additional time gained will enable him to extend his professional services to more persons and over a wider district. This will of course eventually tend, in some degree, to diminish the number of medical men; but of what consequence is this? There is no fear but that their numbers will always be adequate to the demand for their services.

The importance of this saving of time may be illustrated by an example of daily occurrence. A medical man in the country is sent for in haste four or five miles from home: from this point he might have made his rounds, and done half his day's work; but he is obliged first to return home to make up medicines for his patient.

It may be said, that plausible as this kind of reasoning may appear, there may yet be cases in which it is desirable that the general practitioner should be also the vendor of his own medicines. If such there be, I would meet the difficulty by saying that there should be no law in the Pharmaceutical Society prohibiting a general practitioner from obtaining their license or diploma upon his showing the requisite qualifications and passing their examinations.

It may be asked, "what are the advantages of this system of combining the medical practitioner with the seller of drugs, over the system as at present existing in the Apothecaries' Company?" Fearing that I may be trespassing at too great a length upon your present number, I shall defer the

answer till my next letter, and beg to subscribe myself

Your obedient servant,  
PHILOMATHES.

July 22, 1842.

## ANNUAL LIST OF PRACTITIONERS.

*To the Editor of the Medical Gazette.*

SIR,

KNOWING your zeal for the welfare of the public, as well as the medical profession in general, perhaps you would allow me through the medium of your journal to propose a remedy to the legislature, as well as to the profession, against the serious evil arising from the chemists and druggists, as well as other unqualified persons, being allowed to practise and prescribe medicine with impunity. It cannot be expected that a private chartered company, like the Apothecaries, should be enabled to undertake the numerous prosecutions that would be required; and even were they inclined, their funds would be inadequate to the purpose. The only effectual plan would be, the introduction into this Medical Reform Bill (now so much talked of), of a clause compelling the annual publication of a correct list of the qualified medical practitioners, and empowering the magistrates to inflict a summary penalty upon any person convicted before them of practising without a license, and a portion of the fine to go to the benefit of the informer. By this means a most effectual stop would be put to the pernicious practice, and the public secured from the danger of being poisoned by the ignorant and unqualified. Let the profession unite and exert themselves to obtain this object, and they will be doing a most essential service to the public, and secure themselves from the encroachments of the chemists and druggists, although they may be supported by the physicians and others interested in it.

I am, sir,

Your most obedient servant,  
A GENERAL PRACTITIONER.

July 18, 1842.

## PIERCING STRICTURES.

*To the Editor of the Medical Gazette.*

SIR,

IN the last number of the MEDICAL GAZETTE are some observations on what the writer is pleased to call "Mr. Stafford's operation" for stricture of the urethra; meaning the old plan of piercing, which was revived in 1823 or 1824 by M. Amussat, of Paris (as may be ascertained by referring to

the Paris journals of medicine of that date), and consequently some years before Mr. Stafford's publication on the subject.

I allude to this extraordinary claim to originality, because Mr. Stafford's advocate, in the paper referred to, endeavours to make it appear that Sir Benjamin Brodie and Mr. Liston have acted inconsistently in respect to this plan of treating strictures. They both condemn, and with great justice, such a use of the knife in stricture, unless under very peculiar and unusual circumstances; and herein they certainly differ very materially from Mr. Stafford. But if in such cases they depart from the rule, may they not do so without acknowledging obligations to the importer of M. Amussat's revival? If Mr. Liston be unacquainted with what is occupying the surgical world in the neighbouring country of France, it is not likely that he should be so ignorant of the history of surgery as not to know that such an operation was formerly practised; and Sir Benjamin Brodie's operation, in such cases, bears a closer resemblance to the plan adopted by Sir Astley Cooper forty years ago, than to that of Amussat.

The operation of piercing is a dangerous expedient; it has proved fatal in several instances; and should not therefore be resorted to until every other plan has failed, and where there is reason to suppose that the stricture occupies but a small extent of the passage. M. Amussat, notwithstanding his justly acquired celebrity for ingenuity and expertness as an operator, has failed in resuscitating this operation in France.

I am, sir,

Your obedient servant,

CHIRURGUS.

July 20, 1842.

## M. BOURGERY ON THE ANATOMY OF THE SPLEEN.

M. BOURGERY considers the spleen to consist of ten component parts:—1. Vesicular membranes; 2. blood-vessels; 3. floating vascular corpuscles; 4. a granulo-capillary ground; 5. a splenic liquid; 6. splenic glands; 7. lymphatic vessels; 8. nerves; 9. cellular tissue; 10. the enveloping membrane of the spleen.

The splenic vesicles are uniformly spread over the whole extent of the organ, are of an irregular polyhedral, and when fully injected of a spheroidal or oval shape, varying in size in different animals, and also in the same spleen. In man their mean diameter is from 1 to  $1\frac{1}{2}$  millimetre. Each vesicle does not form a simple cavity, its walls being traversed by vessels, which form projections in the interior, covered by the lining membrane. In consequence of this ar-

rangement the cavity is divided into cells, at the bottom of which the minute glands and capillary vessels are seen in relief. There are orifices in vesicles of two sorts:—1. Orifices of communication more or less irregularly circular, whose edges are thin, and formed by a fold of the membrane which lines the cavity. Their diameter is from a quarter to half of that of the vesicle. There are one, two, or three orifices in each vesicle; and to this reciprocal communication is due the ready inflation of the organ, not only from the veins, but also from an aperture on any part of its surface. 2. The venous orifices, less numerous than the communicating, and scattered here and there, a single vesicle sometimes containing two or three, at others one, cannot be found in a group of several vesicles. They are of a circular or elliptical shape, one-twelfth of a millimeter in diameter, and are the absorbing mouths of veins. Between the vesicles are septa, or intervesicular spaces, formed by the separation of their lining membrane, and containing the splenic glands and vessels, their size varying with the greater or less repletion of the organ, but generally bearing the relation of 2 to 3 to the vesicular part. The investing membrane, forming the walls of the cells, is continuous through the whole extent of the spleen, and may be considered as one homogeneous whole, divided into numerous little ampullæ. It is supported by vessels and glands, and forms a sort of frame-work to the organ. This membrane is very complicated in its structure, and cannot therefore be considered, as by Malpighi, to be a simple dilatation of the internal tunic of the veins.

The splenic arteries and veins, running side by side, are directed towards the periphery of the spleen; the veins being pierced in their whole extent by little circular apertures, leading into the smaller intervesicular branches, which are distributed to the splenic glands and the membranes of the vesicles. The small vessels project into the cavities of the vesicles in a peculiar manner to reach the floating corpuscles, and present the appearance of a bunch of grapes. Lastly, all the small vessels of the spleen, in the turgid state, present numerous dilatations and contractions, so as to give them a marked knotted appearance.

The corpuscles are small bodies floating in the cavities of the vesicles, to the walls of which they are attached in a pediculated manner, by the extreme branches of the blood-vessels and lymphatics. They are about fourteen or fifteen times the size of the blood-globules. By the granulo-capillary basis is intended to be represented the two structures placed beneath the vesicular membrane, viz. spherical pale granules, or glands, four or five times the diameter of the

blood-globules, and the capillary net-work of veins, arteries, and lymphatics.

The splenic liquid, which appears to be elaborated by the floating corpuscles and the granulo-capillary basis, is deposited in the cavities of the vesicles, or taken up by the absorbing veins or their walls. It is thick, viscous, of a reddish-brown colour, and under the microscope appears to consist of globules suspended in a yellowish unctuous fluid. 1. Lenticular globules, some of which are surrounded with a red border, and appear to differ very little from ordinary blood-globules; others being colourless. 2. Whitish globules, irregular in form and size, and resembling those found in the chyle and lymph.

The splenic glands, so far as actual volume and consistence are concerned, form the principal organic element of the spleen. They fill, with the ramifications of the vessels, the intervesicular spaces. Their diameter is a quarter of a millimeter. They are united by bands of a similar nature with themselves, which extend over every part of the spleen. From the afferent and efferent lymphatic trunks, and the dispositions of the vessels about them, M. Bourguery is convinced that they are simply minute lymphatic glands. The lymphatic vessels are extremely numerous in the spleen, and in many situations remarkable in their structure, being enlarged at intervals, and, in addition to their valves, divided in their interior by septa, which gives them a sort of rudimentary glandular structure, and shows them to be not merely canals for transport, but also, in some degree, organs of elaboration.

M. Bourguery considers the spleen as an apparatus for the elaboration of the blood, and draws an analogy between it and the lymphatic glands; observing that if, in relation to its anatomical structure, we may define the spleen as a vast lymphatico-sanguineous gland, on the other hand lymphatic glands generally may be considered, to a certain extent, as small spleens appended to different parts of the circulatory apparatus. In treating of the intimate structure of these glands, we shall see how far the idea of the conformity of these two sorts of organs, evident so far as the glandular structure of the spleen is concerned, is borne out by the internal organization of the canals of the lymphatic glands.—*Gazette Médicale*.

### INTRA-PARIETAL HERNIA,

CONSEQUENT UPON A WOUND OF THE ABDOMEN.

A CARPENTER, aged 20 years, a strong and vigorous man, during a quarrel in a tavern,

received, at the lower part of the left side of the abdomen, a violent blow with a cutting instrument. A considerable quantity of blood flowed from the wound, and the man was immediately deprived of consciousness. A surgeon called in at the time, found a coil of intestine projecting from the wound, but no solution of continuity of the hernial portion of the digestive canal was observed. The intestine could not be returned till the wound was enlarged by incision; it was then replaced, the wound united by two cross pieces of adhesive plaster, and the patient was sent to the Hôpital Necker, where he came under the care of M. Berard, on the 3d of January, 1842.

On his admission, there was observed a wound with smooth edges in the left inguinal region, occupying the middle of a line drawn from the anterior superior spine of the ilium to the spine of the pubes; a portion of the small intestine was observed projecting in the wound, of a reddish colour. Different attempts were made at its reduction, which was effected without much difficulty; but the intestine was immediately protruded again, although the patient made no effort. It was, however, again returned, and, to ensure its complete reduction, M. Berard introduced his finger into the wound, and imagined it passed into the abdominal cavity. To prevent the reproduction of the hernia, several points of suture were employed, to unite the edges of the wound. A spica bandage with compresses were adjusted, so as to maintain permanent compression.

Jan. 4th.—The patient had suffered rigors, with pain in the abdomen and vomiting; pulse 96, full. M. Berard directed him to be bled, and leeches to be applied over the abdomen. The vomiting continued, with the pain in the body. The pulse became quick and small, the skin cold, and the patient sank Jan. 7.

*Autopsy*.—The intestines distended with flatus. Slight general injection of the peritoneum, without any trace of lymph or purulent effusion. A small quantity of blood in the cavity of the pelvis was the only fluid found in the sac of the peritoneum. A great deal of infiltration of blood on the exterior of the peritoneum, and between the muscles. But the anatomical disposition which offered the greatest interest was the circumstance that the upper lip of the wound was separated into two folds, of which the anterior was formed by the cellulo-adipose tissue and the aponeurosis of the external oblique, while the inner was constituted by the internal oblique and transversalis. The space formed between the two layers was sufficiently large to admit a hen's egg, and a portion of intestine was folded on itself, and incarcerated in this abnormal cavity. The abdominal orifice of the wound had

about the same extent as the cutaneous aperture above mentioned. The intestine presented no marked disorganization; it was merely red, and injected on its surface.

Under what influence was this abnormal cavity formed in the abdominal walls? Is it to be considered as the result of the attempts made at reduction, or was it consecutive to the suture practised after the admission of the patient into the hospital. Considering the speedy return of the hernia after its reduction, it is probable that the intestine was never completely replaced in the abdominal cavity. And although I supposed my finger to have entered the abdominal cavity, it is probable that the intestine, flattened against the internal orifice of the wound, deceived me or escaped attention.—*Gazette des Hôpitaux*.

### ON THE CAUSE OF THE FIRST RESPIRATION AFTER BIRTH.

By DR. JULIUS BUDGE, of Bonn.

THE experiments detailed in this paper hardly merit notice except for the purpose of expressing a thorough disgust at their brutality and uselessness. It has long been known that division of the vagi nerves renders the respiration slower: and it is concluded that through them the impressions are conveyed from the lungs to the medulla oblongata, which, being reflected, excite the respiratory movements. But Dr. M. Hall has made it probable that the first respiration is due to a reflection of the impression produced by the cold air upon the skin of the new-born animal; and it has been suggested that after birth also the skin is one of the recipients of the centripetal impressions on which respiration depends. To prove this, Dr. Budge actually removed daily a considerable portion of the skin from a rabbit, two crows, and several frogs. The experiments on the frogs were all useless; nothing, he admits, could be deduced from them. In the crows and the rabbit—who survived till, by several instalments, they were almost completely flayed—the respiration was generally, but not always, slower than is natural; the flaying seemed to have an effect somewhat like that of dividing the vagi nerves.

And now, who thinks it more probable than it was before, that impressions on the skin excite the movements of respiration? Who but he would forget that the sensitive nervous filaments exist as well in the raw skin which his cruelty exposes, as in that which he removes?

The details of the experiments are to be found in *Casper's Wochenschrift*.—*Brit. and For. Med. Rev.*

### ON EXTERNAL FISTULÆ OF THE LARYNX.

THE cases here detailed by M. Trousseau are the results of inflammation of the sub-mucous tissue of the larynx, producing first ossification, and then necrosis of the cartilages. In some cases the matter which is formed makes its way to the interior of the larynx, and being discharged as fast as it is formed, the disease goes steadily on till the necrosed portion is separated, and a cicatrix formed over its place. In others, however, matter forms on the outside of the larynx, and opening in the neck a fistula is produced, which either remains permanently open, or closes for a time and then reopens, and so on. Four striking cases unconnected with phthisis are related, and the main practical point deduced from them is, that when there is an external fistula with necrosis, no attempts should be made to close it; for the necrosis is never superficial, but extends through the whole thickness of the ossified cartilage; and if the matter be prevented from discharging itself externally, it will certainly continue to be formed, and produce much more serious mischief by pressing inwards upon the mucous membrane of the larynx, or by exciting inflammatory swelling about the glottis.—*Journal des Connaissances, Méd. Chir.*; and *Brit. and For. Med. Rev.*

### REVACCINATIONS IN THE PRUSSIAN ARMY FOR 1840.

OF 43,522 individuals who were vaccinated, 34,573 had well-marked cicatrices, 6177 had imperfect cicatrices, and 2772 had no marks whatever. The progress of revaccination was regular in 20,952, irregular in 8820, and failed in 13,750. In these last, revaccination was repeated, when 2831 took the disease, and 8958 resisted it. True pustules occurred in 20,952 individuals; and of this number 10,021 had from 1 to 5 pustules, 5875 from 6 to 10 pustules, 4171 from 11 to 20 pustules, and 885 from 21 to 30 pustules. Of those who were revaccinated during 1839 and 1840, 7 have been attacked with varicella, 2 with the varioloid eruption, and 1 with true small-pox. During the year 1840, only 74 cases of varioloid eruptions occurred in the Prussian army, of which number 46 were varicelli, 21 varioloid, and 7 small-pox. Of these last, 2 died; they had not been revaccinated. These eruptions were chiefly observed in recruits immediately on or shortly after joining the army.

The vaccine matter taken from adults who were revaccinated with success was found as



efficacious as that taken from children. The fourth division of the army, entirely revaccinated with matter taken from adults, has not had a single case of small-pox for three years, although it has been stationed in countries where that disease was raging.—*Gazette Médicale de Paris*; and *Edinb. Med. and Surg. Journ.*

REVACCINATIONS  
IN THE  
WURTEMBERG ARMY FOR THE  
LAST SEVEN YEARS.  
By PROF. HEIM.

DURING the last seven years, the Wurtemberg army has only had 20 soldiers affected with varioloid eruptions, and two with small-pox, of whom one died. Of these 22 individuals, two only had been revaccinated a few years previous, and it is stated that one had the varioloid eruption when he was revaccinated, and that the revaccination in the other failed. Revaccination was first performed with lymph taken from the child, but afterwards with that from the adults themselves. The following is the result of the seven years' experience.

Of 22,780 soldiers, 7888 were revaccinated with success. Of this number, 4814 had distinct cicatrices, 1754 had them scarcely apparent, 1208 had no visible marks, and 112 had had small-pox.

6091 individuals were revaccinated with doubtful success. Of this number 3757 had distinct cicatrices of the former vaccination, 1504 had cicatrices but very indistinct, 569 had no visible marks, and 81 had had small-pox.

8801 were revaccinated without success. Of this number, 5106 had distinct cicatrices, 2353 had indistinct cicatrices, 1188 had no visible marks, and 154 had had small-pox.

From this statement it appears that out of 100 men who were revaccinated, 35 were successfully vaccinated of new, in 26 the success was doubtful, and in 39 it failed. The same statements also demonstrate, that in 1 out of every 8 individuals, no scars of vaccination were apparent,—a number so large that Professor Heim, rather than attribute it to the disease not having been received during infancy, prefers to attribute it to the scars becoming obliterated by age.—*Gazette Médicale de Paris*; and *Edinb. Med. and Surg. Journ.*

ROYAL COLLEGE OF SURGEONS.  
LIST OF GENTLEMEN ADMITTED MEMBERS.  
Wednesday, July 20, 1842.

G. T. Jones.—J. R. Oliver.—C. B. Boast.—T. W. Cowell.—T. S. Butler.—H. Speer.—H. Allen.—S. H. Cooke.—R. Hodgson.—H. Callaway.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
CERTIFICATES.

Thursday, July 21, 1842.

E. S. F. Arnold, South Sea House.—W. Adams, 39, Finsbury Square.—E. Seppings, Swaffham, Norfolk.—B. Barkus, Newcastle upon Tyne.—R. Sissons, Hull.—W. Almond, Leeds.—C. F. Curtis, Kennington.

A TABLE OF MORTALITY FOR THE  
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, July 16, 1842.

Small Pox .....	6
Measles .....	29
Scarlatina .....	23
Hooping Cough .....	17
Croup .....	2
Thrush .....	13
Diarrhoea .....	12
Dysentery .....	2
Cholera .....	1
Influenza .....	1
Typhus .....	25
Erysipelas .....	5
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	157
Diseases of the Lungs and other Organs of Respiration .....	206
Diseases of the Heart and Blood-vessels ....	14
Diseases of the Stomach, Liver, and other Organs of Digestion .....	69
Diseases of the Kidneys, &c.....	3
Childbed .....	3
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	3
Rheumatism .....	3
Diseases of Joints, &c. ....	4
Ulcer .....	0
Fistula .....	1
Diseases of Skin, &c.....	0
Diseases of Uncertain Seat .....	114
Old Age or Natural Decay.....	51
Deaths by Violence, Privation, or Intemperance .....	18
Causes not specified .....	0
Deaths from all Causes .....	785

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

July.	THERMOMETER.	BAROMETER.
Wednesday 20	from 52 to 67	29.72 to 29.69
Thursday . 21	46 61	29.69 29.78
Friday . . 22	46 61	29.90 30.05
Saturday . 23	52 66	30.12 30.14
Sunday . . 24	42 73	30.06 29.96
Monday . . 25	53 69	29.90 29.89
Tuesday . 26	46 68	29.91 30.05

Wind, S.W. and W. on the 20th, N.W. on the two following days; N.E. and N. on the 23d; S.W. and N.E. on the 24th; and N.E. on the two following days.

Cloudy, with rain, on the 20th and 21st; since the 21st generally clear.

Rain fallen, .37 of an inch.

CHARLES HENRY ADAMS.

NOTICE.—“Non dubito.” They have.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, AUGUST 5, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Continued fever, continued. Phenomena of the second week; delirium, an eruption, diarrhœa: of the third week; recovery, or death in the way of coma, of apnœa, of asthenia. Symptoms that usher in those modes of death; morbid changes found after them.*

IN the last lecture I commenced the consideration of that important disease, which is best known, in this country, under the name of continued fever. I told you my opinion that there is but one species, although there are many varieties, of continued fever. Sometimes this disease is preceded by symptoms of a slighter disturbance of the system; and sometimes it sets in suddenly, in the midst of apparent health. Whatever premonitory symptoms may take place, they indicate some alteration in the functions of the nervous system, upon which many pathologists have supposed that the first and most direct impression is made, by the exciting cause of the fever. But the exciting cause, in many cases, probably in all, is a specific poison received into the blood: and all analogy is in favour of the belief that the primary change is wrought upon the blood itself. The whole mass of the blood is gradually vitiated; and the first evidence of the circulation of this altered fluid, is depression of the powers and functions of animal life. Among the earlier symptoms of the declared disease, shivering, headache, and occasionally diarrhœa, take the lead.

For the convenience of description I divided the course of the disorder into three

weekly stages: not that it necessarily runs its course in three weeks, but because the sets of symptoms which succeed each other while the disease is in progress, occupy, in the cases which seem to proceed the most regularly, *about* the space of seven days each.

Now the symptoms present during the first week are expressive of disorder both of the sanguiferous and of the nervous system. The patient is hot, flushed perhaps, and thirsty, and he has a frequent and hard pulse. Besides this he manifests indifference, and stupor; his senses are blunted; his intelligence is diminished. His muscular strength is reduced in a remarkable manner; so that he cannot sit up: in many cases he cannot even lie on his side, or turn himself about well in bed, but remains in the supine position: and if he be purged by medicine, or spontaneously, the stools are apt to pass from him into the bed, without his knowing it, or without his taking any care to prevent it. This, however, is more common, and more marked, in the second period or week; the phenomena of which I next go on to sketch.

In the first place, in mild cases, and in some epidemics, the patients begin to improve soon after the first week. Dr. Welsh, in his Account of Fever as it occurred some years since in the Queensbury House Establishment in Edinburgh, says that of 743 patients, 373 (that is, fully one-half) had passed the worst, or had begun to get better, by the ninth day; and several of the physicians who witnessed the fever that prevailed in Ireland in the earlier part of the present century, concur in declaring that, in a vast majority of cases, the disease had "taken the turn," and the patient begun to mend, by that time. But the epidemics, in these cases, were undoubtedly mild. In general no change for the better takes place at the end of the first seven or eight days; but what are called the *typhoid* symptoms develop themselves more distinctly.

The changes that occur are usually the

following:—The pulse becomes more frequent, weaker, and more compressible. The tongue grows drier and browner. More sordes, and of a darker colour, accumulate on the teeth and lips: and it is in this period that delirium is most apt to ensue; and that certain *eruptions* are most often observed. But the symptoms that relate to the nervous system are often still the most prominent. The patient generally loses his *headache*. His voluntary movements, however, become very much weakened, and are sometimes exercised irregularly. The posture which the patient in this stage almost always assumes is, I say, indicative of this weakness; he lies on his back, and he *sinks down in the bed*, slips towards the foot of the bed. He is unable to make or bear that degree of voluntary exertion which would be necessary to place him upon his side. Hence we hail it as a good omen—because it is an indication that the patient still retains some strength—if we find him on his side, or even on his back with his knees drawn up. Other proofs of muscular debility, approaching to palsy, are apt to present themselves. The voice becomes feeble; the patient can scarcely utter an audible sound. Perhaps he is unable to swallow. This is a very bad symptom, though it is one that has been recovered from. Sometimes it seems that the power of deglutition is not lost, but the patient is too listless to try to swallow: or the dry and parched state of the tongue and throat render it difficult and painful for him to attempt to do so. The patient is apt to lie with his mouth open: and breathing thus through the mouth tends to dry the tongue. Hence it is well to desire the sick person to swallow a mouthful or two of water, and so to moisten his tongue, before you decide upon the state of that organ, or upon his facility of deglutition. Often, in bad cases especially, there are little convulsive startings of the tendons, (*subcullus tendinum* is the technical name of the symptom) and other irregular and involuntary actions of the muscles: tremulous movements, especially of the tongue and of the hands; and sometimes the patient is unable to put out his tongue at all. There are two symptoms which present themselves in the majority of instances in the second week of the fever, and which deserve your particular attention: I mean delirium, and the eruption which belongs to the disease.

The delirium is peculiar. The patient wanders, at first, in the night only; and the delirium commonly appears on his awaking from disturbed sleep. Sometimes he is desirous of getting up, and talks incessantly and earnestly in a loud voice, and can only be kept in bed by the imposition of some restraint. Usually, however, his rambling is of a tranquil kind, and without agitation.

His mind seems elsewhere: he is inattentive to all that passes around him; but he lies still, muttering disjointed words or sentences, like a man talking in his dreams. From this state of *typhomania* the patient may sometimes be roused by loud speaking addressed to him, or by the sight of a strange face; so that, though incoherent and delirious just before, he may become collected when his medical attendant enters the room. But he presently relapses. During the delirious state there is a great deficiency of sensation, and insensibility to impressions. The patient is deaf. This deafness you may hear spoken of as being a good omen, or favourable sign; but it is so only by comparison: it indicates a condition of brain less perilous than its opposite, in which the sense of hearing is morbidly acute. Imperfection or loss of vision is much rarer, and much more dangerous, than deafness; yet the eye is generally dull—unlike the brilliant eye of acute phrenitis; it corresponds with the expression of the countenance, which is perplexed rather than wild. Sometimes, however, as the disease advances, black spots, like flies on the wing, *muscae volitantes*, appear before the patient's eyes: in consequence, it is presumed, of partial insensibility of the retina. The patient attempts to grasp or catch these in the air, or to pick them from the bed-clothes. This is called *flaccitatio*. After these symptoms recovery is not common. The mouth and tongue are dry; yet the patient no longer complains of thirst. The taste, the smell, the sense of touch, are all impaired; even external inflammation may take place, especially about the hips and sacrum, and go on to gangrene, without any complaint of pain from the patient. He seems altogether careless about the issue of his disorder. If, at this period of the fever, you ask him how he does, he will probably declare that he is quite well. I have already alluded to the involuntary passage of the *fæces*: this may depend, in part, especially in the advanced stage of the disorder, upon debility or paralysis of the sphincter muscles. The urine also dribbles away frequently: and these are points which must always be looked after; first, for the sake of keeping the patient as clean and dry as possible, the irritation of the urine and fecal matters tending to produce sloughing ulceration; and, secondly, with the view of preventing the bladder from becoming unduly distended. Retention of urine, and all its bad consequences, may otherwise occur. It is a good general rule, therefore, to examine the hypogastric region every day with the hand; and also to ask to see the urine, not for any purposes of prognosis, but to ascertain that it is regularly discharged.

It is also, I repeat, in this stage of the disorder that the rash or eruption which so

often accompanies it, very frequently, shews itself. Sometimes it is noticed earlier. It consists of small rosy blotches, of a roundish or lenticular shape; scarcely raised, if raised at all, above the general surface of the skin on which they appear. Chomel states that they disappear under pressure; but it is not so. I have again and again observed that they diminish or become fainter under the pressure of the finger; but they are not effaced, even for an instant. They are sometimes few; sometimes so numerous as to dapple the whole surface of the abdomen, or of the thorax, or of both. Upon the limbs they are less common, and less closely set. I believe that they often besprinkle the back, although they are seldom looked for there. They vary in intensity of colour, and, therefore, in distinctness. The whiter the skin, the more obvious do the spots become. In brunettes they may easily escape notice. In this form of disease the entire skin is often unnaturally dusky.

The eruption does not come out all at once: nor is its duration always the same. Sometimes it vanishes entirely after two or three days. Sometimes, on the other hand, it lasts a fortnight, or more. In the latter case it is probable that successive crops of the spots continue to appear.

The rash now described stamps continued fever with one of the most striking characters of the exanthematous group of febrile diseases: but it certainly is less constant than the cutaneous phenomena of small-pox, measles, or scarlet fever. It occurs much more regularly in some epidemics than in others. Fever is very rife in St. Giles's, and in other crowded parts of this town, just now (1838). Our wards at the Middlesex are full of it; and scarcely a case presents itself without these spots. We speak of it familiarly as the *spotted fever*; or (from the resemblance which the rash bears to that of measles, hereafter to be described) as the *rubecoloid fever*.

You cannot well confound this mottled rash with *petechiæ*, which are little specks, or dark circular spots, resulting from a minute extravasation of blood beneath the cuticle. The specific rash and these *petechiæ* are, however, sometimes mingled together.

It may not be superfluous to caution you against mistaking *æs-bites*, which are common to nearly all our hospital patients, for this specific eruption, which is peculiar to the fever patients. The round red stain, with a dark point for its centre, sufficiently distinguishes the mark of the insect from the rose-coloured blotches of the disease.

There is another eruption described by the French as occurring in this disease without being peculiar to it. In this coun-

try it is now very rare; but it used, when the hot plan of treatment was in vogue, to be very common indeed here, in a variety of febrile complaints; and it was, and is, occasioned by profuse sweating. *Sudamina*, the vesicles composing the eruption are called. They are small, hemispherical, transparent elevations of the cuticle, containing a clear watery fluid. The vesicles are from a quarter of a line to half a line in diameter; they have no red bases; and they are so perfectly pellucid, that when you look upon them in a direction perpendicular to the skin on which they stand, they may easily escape your notice. Viewed sideways, seen, i. e., by reflected light, they present a bright surface, and look like so many drops of water, and you may feel with your hand that they *roughen* the part affected with them. These sudamina are mostly met with on the thorax, along the sides of the neck, and about the axillæ. By degrees, the limpid fluid disappears, and they shrivel up; the cuticle becomes wrinkled, and dries into a whitish powder.

*Diarrhæa* is another marked symptom observed in many cases of continued fever, though not in all, at this period of the disease. When the stools are involuntary, when they are passed in bed without notice on the part of the patient, they add materially to his danger, by the irritation, and the sores, which are liable to result from their contact with the skin. There is seldom much pain of the abdomen complained of by the patient; but if you make pressure, especially about the situation of the cœcum, you may often observe that he winces, or that a transient expression of suffering passes across his features. The character of the evacuations remains the same, and is almost distinctive of the disease: thin, yellowish, ochrey, like pea-soup. When in fever such stools persist day after day, and several of them every day, you may safely infer that there is ulceration of the bowels, although there should be no pain complained of, even when the abdomen is pressed.

And the same conclusion will become still more certain when *hæmorrhage* from the bowels occurs, as it is apt to do, in this stage of the fever. It often takes place unexpectedly, sometimes in considerable quantities, and rapidly exhausts the patient; or it recurs at intervals to a smaller amount, wasting his strength as effectually, though more slowly. The bleeding is probably owing, in general, to the division or opening of some of the mesenteric veins, by the ulcerating process which I shall more fully describe by and by. This is not, however, a necessary consequence of the ulceration; for the vessels are usually obliterated previously to their erosion. Sometimes blood

may be thus poured into the bowel without being voided. Andral relates a case in which a man died suddenly, and unexpectedly, at an advanced period of continued fever. Large clots of black blood filled the lower two-thirds of the small intestines, which were crowded with patches of ulceration. No part of the blood had passed the valve of the cœcum.

Hæmorrhage from the bowels occurs also in continued fever sometimes in another way; in connexion with other *putrid* symptoms, as they are not unaptly called: petechiæ, purple spots, bruise-like blotches, and extreme depression of the vital powers. In these cases the hæmorrhage is strictly of the *passive* kind, and it is a symptom of the worst omen. Like those effusions of blood from the same parts that happen in scurvy and purpura, it depends upon a morbid condition of the blood. This is no matter of speculation, for by this time the sensible qualities of the blood are manifestly changed: its natural tendency to coagulate when withdrawn from the body is diminished, the crassamentum is large and loose, and fills the cup, and sometimes is rather an incoherent sediment than a clot. When these putrid symptoms are strongly marked, a peculiar foetor is exhaled by the patient's body; his tongue becomes dry, black, and fissured; his teeth are covered with dark sordes; sloughs form from the mere pressure of the bed on which he lies; in extreme cases the toes have mortified; and Dr. Roupell relates one terrible instance in which both legs rotted away to the bones, which it became necessary to saw through: yet this patient recovered.

Death may take place in this, the second, period of continued fever. Of 42 patients who died under his care, Chomel counted nine in which the fatal event occurred between the 8th and the 15th days.

The phenomena belonging to the *third* period of the fever vary considerably according as the disease is about to terminate in death, or in recovery. Among Chomel's 42 fatal cases, I have already mentioned that one death took place in the first week, and nine in the second; the remaining 32 all occurred in the third period. And the tendency of the fever to terminate during this period is equally well marked in the cases which recovered. Of 24 such patients, one alone began to be convalescent in the first week; and of those whose symptoms were at all serious, not one shewed marks of convalescence before the end of the second.

When the disorder is about to end favourably, the more formidable of the symptoms diminish and abate. The patient begins again to attend to questions that are put to him; the air of stupor which had hung over

his countenance clears away; he once more shews an interest in what is going on around him; the temperature of his skin becomes more natural, the tongue moist and cleaner at its edges, and the frequency of the pulse is less. The evacuations from the bowels are less numerous, more consistent, and more healthy; and the patient is aware when the necessity for passing them arrives, and gives notice, or asks for assistance. Generally, at the same time with these tokens of improvement, the emaciation which has taken place becomes remarkably conspicuous; perhaps it is the more observable on account of the patient's resuming a more natural expression of countenance.

In many instances, the amendment is so gradual that we can scarcely say when it begins. In other cases the favourable crisis is preceded by an aggravation of most of the former symptoms, and a marked increase of the general distress. This is a very curious circumstance; and it did not escape the notice of our great dramatist.

"Before the curing of a strong disease,  
Even in the instant of repair and health,  
The fit is strongest. Evils that take leave  
In their departure most of all shew evil."

Certain evacuations are also sometimes observed to accompany or to be connected with the favourable change; and the most common of these is the evacuation of sweating.

On the other hand, when the disease is about to terminate in death, that event may take place in different ways; in either of those modes, in short, which I took some pains to distinguish in the earlier part of this course of lectures. I told you then that I had been taught the importance of studying the tendency to this or that mode of dying, in reference especially to fever, by Dr. Alison. My own experience has since sufficiently approved to me the wisdom of his teaching. Cullen inculcates the necessity of "obviating the tendency to death." To do so, we must ascertain the direction of that tendency. We do not so much cure these exanthematous maladies, as keep our patients alive while they recover. If we would prevent their dying we must know in what manner they are in danger of dying.

The most common mode of death in continued fever is certainly that of *coma*. The organic life survives the animal life. The muttering, half-conscious, dreamlike stupor, from which the patient may be roused for a while, becomes, by degrees, more profound, and death begins in the head. This mode of death, occurring in the second or third week of the fever, is associated, frequently, with the symptoms of putrescency already described. But as the stupor deepens, the pulse generally grows weak, and the ex-



tremities become cold. So that death does not come purely in the way of coma; but we have a compound of coma and asthenia, in which the coma takes the lead.

Now coma may result from at least two different kinds of cause. One cause is pressure, which is mechanical. Another, which is probably chemical, is the circulation of some noxious or narcotic substance (such as opium) in the blood. And there are, doubtless, many physical conditions of the nervous mass itself which are capable of arresting the cerebral functions, and producing coma. To which kind of cause are we to ascribe the stupor that supervenes during the progress of fever? That is an interesting, and in reference to practice, an important, question.

Physicians have diligently attempted its solution, by examining the dead brain. I cannot tell you how often I have looked, and looked in vain, for some palpable disorganization, or some effusion implying pressure. All who are familiar with the dead-house of a hospital are aware that this fruitless search for some physical explanation of the comatose state, after death by fever, is of very common occurrence.

Chomel—one of the latest, and a very able and accurate French writer on fever—gives the following statement in respect to 38 fatal cases, in which the brain was carefully and minutely inspected by him. In 15 of the 38, no morbid appearance at all was perceptible: in 12 there was some serous fluid, from a tea-spoonful to a table-spoonful, in the ventricles: in 7 there was what he calls *œdema of the meninges*, effusion, that is, in the meshes of the pia mater: in 6 general, but slight diminution of consistence: in 2 some alteration of density: in 5 a speckled appearance of the cerebral substance. Now to what conclusion do these facts lead us? Why, in the first place, to the conclusion that those pathologists are in error who maintain (as Dr. Clutterbuck does, for whose experience and talents I entertain a sincere respect), that the essence of continued fever is *inflammation of the brain*. Not only do we fail to discover, in many instances, any traces of inflammation, upon inspecting the dead brain, but we find that, during the life of the patient, measures which would be likely to aggravate any inflammatory mischief—strong stimulants, for example, wine or brandy,—do actually and obviously, in cases innumerable, relieve the comatose symptoms, and benefit the patient. The inference seems unavoidable, that the coma, in such cases, has some other cause than that mechanical pressure which arises sometimes from the effusion of fluid upon the surface of the brain, or within its ventricles; and that other cause is supplied by the poisoned

blood. Here again we may adopt the pathology of Shakspeare:—

“The life of all his blood  
Is touched corruptibly: and his pure brain,  
(Which some suppose the soul’s frail dwelling-house)  
Doth by the idle comments that it makes  
Fôretel the ending of mortality.”

In some malign epidemics the nervous system is overwhelmed at once, in the very outset, by the force of the poison. The patient becomes stupid or bewildered; his surface is cold, clammy, purplish, and his pulse feeble: the coma rapidly augments, and death may ensue within twenty-four hours. We sometimes see this fearful train of symptoms in small-pox; and still more often and more strikingly in the worst forms of scarlet fever. I believe that in these cases there is no deviation, cognizable by our senses, from the healthy texture and appearance of the parts within the skull.

Nevertheless, there may be, and there often is, in these fevers, actual inflammation of the brain or its membranes: but this is an incidental complication. We conjecture that, in addition to the influence of the poison upon the nervous system, there may be a low degree of inflammation going on within the head, when we find it externally hot, when the patient has flushed cheeks, and a vascular eye, and complains of dull headache. And there are some instances in which we recognize more distinctly the outward signs of encephalitis—severe pain in the head, high and fierce delirium, intolerance of light and of sound, with much heat of skin, and a hard pulse. When coma succeeds such symptoms as these, we naturally ascribe it, in part at least, to the effects of the inflammation: and rightly, for we find traces of inflammation after death; serous effusion beneath the arachnoid and in the cerebral ventricles; shreds of coagulable lymph; and more rarely suppuration. I suspect that genuine encephalitis, which is of course attended with pyrexia, is sometimes mistaken for continued fever with intercurrent inflammation of the brain. Great attention, and some skill and judgment, are required for discriminating those cases of fever in which such inflammation occurs, and for directing the appropriate treatment.

The death in fever, by *apnœa*, is certainly much rarer than that by coma: yet it is not very unfrequent. It often mingles itself with the death by coma. From the earliest period of the fever, we may, in most cases, notice some increased quickness of respiration, which is not entirely owing to the mere fever, or to acceleration of the circulation; for the ear, when applied to the parietes of the chest, discovers rhonchus, and sibilus, at least. Frequently there is considerable dyspnœa

for some hours, or for a day or two before death: and this may be apparent only, in consequence of the stupor; or it may be real, and proceeding from a low degree of pneumonia, which, by interfering with the due arterialization of the blood, may aggravate, or even give rise to the coma: and such pneumonia is apt to be masked by the fever; declaring itself by none of the ordinary symptoms of cough, rust-coloured sputa, or pain of the thorax. The inflammation, thus latent, is discoverable, however, by the sense of hearing.

Now what does dissection teach us with respect to the condition of the lungs after death from continued fever? Why, the most common unnatural appearance met with in the pulmonary substance is engorgement: a state similar to that which occurs in the first stage of pneumonia. But here the engorgement is probably in a great measure mechanical, and takes place during the last few days of the patient's life. As the vital powers diminish, the laws which govern the physical world resume their empire. The fluids, and the blood especially, accumulate in the most depending part of the viscera: and the lower and posterior portions of the lungs in particular become loaded: but besides this, it is not unusual to find large portions of the lungs in a state of hepatization, and even infiltrated with pus: and the bronchial tubes clogged up by viscid and frothy mucus.

The mode of death by *asthenia* or syncope is not very common *as existing by itself*; but it is *often* combined with one or both of the two other modes. In some cases of fever, however, death does appear to take place from *mere debility of the heart*: there having been no pulmonary embarrassment, and the head having remained clear. Death, in such cases, is preceded by those symptoms of debility which have been already described. The pulse becomes small and weak, and like a thread; the patient lies on his back, and sinks down in the bed; the features sharpen; the eyes are hollow and dim, as though glazed; the sphincter muscles fail to contract; the extremities grow cold; cold sweats appear in different parts of the body; and at length the heart ceases to beat, and the patient to exist.

Death occurring in this manner does not occur *early*. It happens at an advanced period of the disease. It is noticed sometimes in persons who have been largely bled, or too actively depleted at the commencement of the fever; and in those who have suffered a good deal from *diarrhœa*. In short, as the two previous modes of death are connected, often, with morbid conditions of the head and chest respectively, so death in fever occurring purely or *chiefly* by *asthenia*,

connects itself with morbid conditions existing within the belly.

And we trace the vestiges of disease much oftener in the *abdomen* than either in the *brain* or in the *thorax*; and the mischief which we there discover is more constant and definite than elsewhere. It is proper, therefore, to inquire somewhat more closely into the morbid appearances observed in the abdomens of those who die of continued fever.

I need scarcely remind you that the intestinal canal is largely furnished, on its inner surface, with glands, or follicles, which consist of little more than crypts, and of which the precise office has not yet, I think, been accurately determined. Some of these glands are sprinkled (one may almost say at random) over the whole tract of mucous surface. These are accordingly called *solitary glands*. Till I was better instructed by Professor Todd, I used to speak of them as being the glands of *Brunner*; whereas the glands discovered and described by that anatomist are limited to the duodenum. Other glands or follicles are collected into groups, and are named *glandulæ agminatæ*, or often the glands of *Peyer*, who has given a capital description of them. Now the arrangement of these glands of Peyer is peculiar; and, in reference to the morbid anatomy of continued fever, very necessary to be known. They are met with in the ileum alone: they are, mostly, oblong in form: and they occupy that part of the bowel which is opposite its mesenteric attachment. They are largest, and most numerous, and consequently most thickly set, in the lower end of the ileum, which, in some instances, is almost entirely covered with them: they are found also upon the ileo-cæcal valve; but beyond that they do not go in that direction. Ascending from the cæcum towards the jejunum, these groups or patches become smaller, shorter, more circular, and less numerous: they are separated by longer and longer intervals, till at last they cease to be visible at all. Where there are valvulæ conniventes, there the situation of these patches is very obvious; for the valvulæ conniventes are interrupted, and never run across them. This fact has sometimes led to curious mistakes. I have seen in the museum of the College of Surgeons a preparation put up by Mr. John Hunter (but not labelled I presume by him) professing to be an example of the destruction of portions of the valvulæ conniventes by ulceration. It is nothing more than one of these natural patches, rather more plainly developed than usual.

These glands, in their healthy state, are much more conspicuous in some bodies than in others. You may see, if you look at them attentively, that they are made up of a congeries of mucous follicles, of which the ori-

*feces* are obscurely apparent. Now the main alterations met with in the abdomen after death, in continued fever, are alterations of these very glands: of the solitary glands, to wit; and still more constantly and remarkably of the agminate glands.

The changes which these glands undergo are of the following kind. In the first place they become enlarged, and more *perceptible* than they are in a natural state. They then present a greyish transparent surface, dotted over with black points; which black points mark, I conceive, the excretory mouths of the several follicles. Then, as the inflammation, for such it is, advances, the patch becomes reddish perhaps; and the follicles burst or ulcerate, or slough away: not altogether, but partially and by piecemeal; so that an irregular ragged ulcer is generally left, having thickened edges. Sometimes, however, the follicles disappear without there being much redness or thickening: the mucous membrane immediately adjacent, and even the remaining part of the patch of follicles, being pale, and level. Sometimes the patch puffs up into a sort of fungous swelling, in which all trace of the follicular structure is lost. The colour of the ulcerated surface is various, as well as its form and appearance. Sometimes it is pale and grey; sometimes red; oftentimes yellow, as if the exposed cellular and other tissues were stained by the ochrey fluid which had been poured from the bowels during life. What I have hitherto stated relates to Peyer's glands; but the solitary glands participate, usually, in the change. They become, in the first place, large and hard, and present a whitish coloured projection from the surface, which, by a mistaken analogy, has sometimes been called a pustule. At length a loss of substance takes place in these also; beginning at their summit, and producing a small, but sometimes a deep ulcer.

And of these changes it is further to be observed, that they are more common, more numerous, more extensive, more advanced, in proportion as we approach the cæcum. It is natural that we should meet with *more* ulcers near the cæcal valve, because there are more glands there; but undoubtedly the ulcers are (in general) *farther advanced* there than higher up in the bowel.

Going along with this ulceration of the mucous glands of the intestine, and above all of the aggregate glands of the ileum, you will frequently find inflammation (*i. e.* redness, hardness, and swelling) of the corresponding *mesenteric* glands. This would seem to be a consequence of the inflammation and ulceration of the mucous glands. The inflammation of the mesenteric glands is, I conceive, secondary; and bears the same relation to the ulcers seen in the bowel, as a

bubo in the groin bears to a chancre on the glans penis.

These alterations are extremely interesting, because they afford a plausible explanation of many of the symptoms of continued fever. They account for the diarrhoea; they account for one form of occasional hæmorrhage from the bowels; they account for the uneasiness or pain which is experienced when the abdomen is pressed, and teach us why that uneasiness is greatest in the situation of the cæcum. Nay we can even understand why, although these ulcerations exist, there may be *no* pain occasioned by them. This may be partly owing to the general insensibility to impressions and sensations of all kinds produced by the stupor; but partly, also, it probably depends upon the depth to which the ulceration goes. The mucous tissues are possessed of but little sensibility even under inflammation; but if the muscular and peritoneal coats become involved in the inflammatory process, then pain begins to be felt. I remember, a few years ago, attending a young lady ill of fever, with a very well-informed practitioner, but one of the old school, for he had not turned his attention much to the state of the intestines in that disease. One day we learned that our patient had had hæmorrhage; from the uterus her friends supposed; but when I saw the discharge, I was certain, by its appearance, and by its odour, though it was not mixed with any *feces*, that it had come from the bowels; and I stated my conviction that there was ulceration in the lower portion of the ileum. But she had no pain in the abdomen. You might press any part of it without exciting the smallest uneasiness. So, distrustful of my opinion, they called in an eminent accoucheur, who also pressed and examined the belly: but neither could he detect any tenderness or undue sensibility. He next examined the uterus *per vaginam*; but could discover nothing wrong there. Some few nights afterwards the general practitioner was called out of his bed to this patient. He was told that the hæmorrhage (or flooding as they called it, for they persisted in believing that it was uterine,) had returned; and before he arrived at the house the patient was dead. We next day opened the body together. The uterus was perfectly natural; there was no vestige of discharge or bleeding in the vagina: but the ileum, for about a foot above its entrance into the cæcum, was in a state of superficial but ragged ulceration, and universally red and smeared with blood. I mention this as a strong fact in illustration of the possibility of there being much disorganization of the inner surface of the intestines, without any pain to reveal it.

Now the alterations I have last been

sketching—the thickening, redness, tumefaction, and ulceration or sloughing of the glands of Peyer, and also of the solitary glands—are so common in fever, particularly in some epidemics, that many pathologists are of opinion that fever is essentially inflammation of these glands, and nothing else. But this, I am sure, is an error. In the first place, if this doctrine were true, it would almost follow of necessity that the severity of the case, and the intensity of the symptoms, should be in proportion to the number, depth, and extent of the ulcerations. But this is far from being so. In cases in which the symptoms have been of the worst kind, there have been found very few ulcerations, and those small and apparently insignificant. On the other hand, when the complaint has run a moderate course, but at length has terminated fatally, it is not uncommon to discover a frightful amount of disorganization in the ileum.

But what is more conclusive is, that the occurrence of this inflammatory condition of the mucous follicles of the intestines is *not constant*, in continued fever. If one well-marked instance of the disease should occur, without any trace of a morbid action having been going on in the mucous follicles, that instance would, of course, suffice to overturn the theory. But *scores* of such cases have occurred. I have seen many such myself; and other persons have seen more. Since attention has been drawn to the subject, the patches of glands, and the whole tract of mucous membrane, from the stomach to the rectum, has been diligently explored: and the result seems to be that, at certain times and places (in other words, in certain epidemics), the ulceration of the inner surface of the intestines is far less common than in others. It was comparatively rare in an epidemic of which I witnessed some part in Edinburgh. Then I came to London; and for several years I never saw a body opened after death by continued fever, without finding ulcers in the bowels. More recently, however, and especially during the present epidemic (1838), I have looked for them, carefully, in many cases that have proved fatal in the Middlesex Hospital, and have discovered neither ulceration nor any other apparent change in the follicles of the intestines. Still in my own experience such ulcers have been vastly more often present than absent. Cholera, during five years' investigation of this matter in the Hotel Dieu, never met with an exception to the general rule of their occurrence; or of some degree or form of that kind of alteration in the mucous glands, of which the ulcer is the last stage.

We must conclude, upon the whole, that although the inflammatory state of the soli-

tary and aggregate glands, which strew the surface of the mucous membrane of the alimentary canal, is not the essence of fever, yet that it is a very frequent companion of continued fever.

But when it does occur, is this state of things always, or necessarily fatal? By no means. It *may* be fatal, in more ways than one. It may lead to death, by exhausting diarrhoea, in the way of slow asthenia; it may kill by laying open a large mesenteric blood-vessel, and so producing copious hæmorrhage and mortal syncope; it may, and often does, destroy the patient, by *perforation* of the bowel: the ulcer penetrates the mucous and muscular coats, and reaches the peritoneum; and sometimes that membrane gives way, and sometimes it does not. The consequences of its rupture or perforation—the escape, I mean, of the contents of the bowel, and the supervention of intense and uncontrollable peritonitis,—I need not again dwell upon. But the ulcers may, and doubtless often do, *heal*: and the *scars* which they leave behind them are frequently to be seen. The ulcerated surface seems to clothe itself afresh, by degrees, with a new mucous membrane; which is thin, however, and adherent to the subjacent tissues, and does not slide over them when pressed between the finger and thumb, as the healthy portions of the coats of the bowel will do upon each other. And in the place of the cicatrix there is usually to be seen a manifest puckering, and a number of little wrinkles or lines, radiating from a common centre.

The spleen—I may observe, before I conclude this lecture—is more frequently found altered in texture after death by continued fever, than any other part except the glands of which I was last speaking. It is usually enlarged, of a dark colour, and of soft, and sometimes almost of rotten, consistence.

To-morrow I shall endeavour to point out some of the most important *varieties* that have been found to occur in this disease of continued fever.

## LECTURES

### ON THE

## DISORDERS RESULTING FROM DEFECTIVE NUTRIMENT.

By G. BUDD, M.D. F.R.S.

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DR. LIND tells us, that while he was surgeon of the *Salisbury*, in 1746 and 1747, scurvy raged with great violence in that ship during two channel cruises, one of ten



weeks, the other of eleven; and that in each of these cruises it shewed itself in less than six weeks after they put to sea: yet in a subsequent cruise of *twelve* weeks, which was the longest the *Salisbury* made, there was but one scorbutic person on board. Dr. Lind could assign no cause for this difference except the state of the weather. The real cause is, undoubtedly, to be found in the circumstance, that the two first cruises were made in the months of April, May, and June, so that she left port in spring; while the last was performed in the months of August, September, and October.

It was long brought forward as a strong argument in favour of the great influence ascribed to cold in the production of scurvy, that the sailors who suffered most from it were those engaged in the northern whale-fishery; although the vessels employed in this service were better provisioned than any others, the voyage from this country short, and the men kept constantly in action. The fact was unnoticed—that these vessels always leave this country in spring.

The history of our navy abounds with instances showing that scurvy is not produced by the use of salt, by cold, or by the various other influences to which it has been vaguely ascribed, but imply by prolonged abstinence from succulent vegetables and fruits. A very instructive instance, the last the annals of our navy furnish, occurred in the channel fleet, under the command of Lord Howe, in the spring and summer of 1795; a year ever memorable for the complete extinction of scurvy in our navy by the introduction of lemon-juice as a regular article of diet.

The winter of 1794-5 was long remembered for its severity, and the distress it occasioned by the destruction of vegetation. In the beginning of April scurvy made its appearance in the channel fleet, and soon spread to such an extent as to endanger the safety of the whole fleet. Its speedy suppression became an object of national concern, and every effort was made by the Admiralty to effect it. The men were furnished with fresh meat, and with a plentiful supply of oranges and lemons. Vegetables, at first, could be procured only in small quantities. As the season advanced, they grew more plentiful, and after the 31st of May, 5000 weight of salad was distributed daily among the ships at Spithead.

The good effects of this change of diet were astonishing; and on the 12th of June the squadron sailed in good health. Scurvy, however, made its appearance again, but it was found, from the list of patients, that during the cruise, which was a long one, *not a man who had shared in the allowance at Spithead had the slightest recurrence of it.*

The scarcity of vegetables, consequent on

the unusual severity of the winter of 1794, brought the diet of the poor in our large towns nearly to what it was before the succulent vegetables, which now form so important a part of the food of the people, were introduced into this country; and, as happened in the olden time, scurvy showed itself among them during the spring months. In the spring of 1795, well-marked cases of scurvy were introduced into most of the London hospitals; and Dr. Heberden has left a good account of some that were under his own care in St. George's. Speaking of one of these patients, he says, "His diet, previously to the occurrence of scurvy, consisted of bread and butter, with tea, for breakfast; fresh meat and bread for dinner; and water-gruel for supper. This was his common food at all times, excepting that he had been used to eat vegetables, which, on account of their high price, he had not been able to procure for some months."

Another cause to which men had recourse, in their inability to explain the anomalies of scurvy—that in some voyages it appeared in a few weeks, in others only after as many months—is defective ventilation and want of cleanliness. No doubt, free ventilation and cleanliness contribute much to health, by furnishing a constant supply of the first necessary of life; and want of them greatly increases sickness and mortality in our large towns, by favouring the spread of infectious diseases; but it is equally clear that it has no influence, at least no direct influence, in causing scurvy.

The narrator of Lord Anson's voyage tells us that during the latter part of their run, before their arrival at the island of Tinian—the part of the voyage in which scurvy proved most destructive—all the ports were kept open, and uncommon pains taken to sweeten and cleanse the ship, without producing any abatement in the progress or the virulence of the disease.

Dr. Trotter, in his admirable account of the health of the Channel Fleet, in 1795, from which I have already borrowed, says: "To have thought of foul air as a cause of scurvy, when it appeared in the *Royal George* and *Queen*, would have been the last resource of a physician investigating causes, who had witnessed the admirable system of duty practised by Captains Domet and Bedford."

The fact, that scurvy is at present never met with in the most crowded and filthy parts of the metropolis, affords additional proof that defective ventilation and want of cleanliness have no direct influence in causing it.

But medical writers have been slow to perceive the full force of these facts, and to admit, what the history of the disease incontrovertibly proves, that scurvy is the effect of



deficient nutriment only; and that cold, defective ventilation, and the various causes assigned for it, have no other influence than in so far as they waste the body or impair nutrition.

The time during which abstinence from succulent vegetables must be continued in order to produce scurvy, varies, as I have before remarked, according to the nature of the food on which the person has been living. The disease showed itself earlier in the voyages undertaken in spring, when the men for some time had eaten sparingly of vegetables, than in voyages commenced at the end of summer, when vegetables and fruits had been for some time abundant. The element, whatever it be, which the vegetable juices furnish, and which is the true preventive of scurvy, is expended slowly. The better a person has been supplied with it, the longer he can subsist without it. We have an analogous fact in the prolonged abstinence from food that animals which have much fat can maintain. The fat is slowly consumed in fuel for the respiration and animal heat.

As might have been expected, scurvy shows itself sooner, under the same diet, in persons reduced by other illness. In the Channel Fleet, in the spring of 1795, scurvy appeared chiefly in those men who were convalescent from an epidemic catarrh; and during the siege of Alexandria in 1801, those soldiers who had received severe injuries, or were reduced by the ophthalmia, which at that time prevailed among them, were the first to suffer from it.

It has often been observed to affect in an especial manner persons recovering from intermittent fevers; and there can be little doubt that losses of blood, debilitating medicines, or any illness that wastes the body, would have a similar tendency, and hasten the appearance of scurvy.

The periods of life, too—that of growth, when the demand for nourishment is great, and that of decline, when the powers of reparation are feeble—are those in which scurvy shows itself the soonest. It appears, from the registers of the Dreadnought, that persons between the ages of 20 and 30 are the least liable to scurvy; and that above the age of 30 the disposition to it continually increases with age.

The whole may be summed up in this—that scurvy, in common no doubt with all diseases that result from deficient nutriment, shows itself soonest in young persons, and in persons wasted by losses of blood, by great bodily exertion or by illness, and in persons in whom, from age or any other cause, the assimilating powers are weak.

A remarkable circumstance in the history of scurvy is the rapidity with which recovery takes place, when the patient is freely supplied with oranges or lemons, or almost any fresh

succulent vegetables or fruits. In the course of a few days only, the complexion loses its sallow and dusky hue; the gums become firm and florid; the effusions of blood from the skin and between the muscles disappear; the despondency and muscular weakness give place to cheerfulness and a feeling of strength.—every thing betokens the rapid return of health.

The recovery is not only rapid, but it is complete. The disease, however severe, does no permanent harm to the constitution. In this respect scurvy offers a striking contrast to other diseases produced by deficient nutriment.

The circumstances under which the disease occurs, the symptoms which mark its presence,—especially the dusky hue of the complexion, the spongy state of the gums, and the great proneness to hemorrhage,—and the absence of any special lesion of the solids discoverable after death, leave no doubt that a faulty state of the blood is the source of all the symptoms. The food is deficient in necessary constituents, and the blood formed from it is imperfect. A circumstance which shows that the morbid change of the blood in scurvy is of a special kind, is, that even in persons labouring under other and fatal diseases, the symptoms of scurvy rapidly disappear under the use of lemon-juice. I have witnessed several instances of this, but none more remarkable than in a man who was admitted into the Dreadnought in a high degree of scurvy, and affected at the same time with dropsy from granular kidney. Notwithstanding the latter disease, the disappearance of the scorbutic symptoms, after he was freely supplied with oranges, was as rapid as I have ever seen it.

The question now naturally occurs, what is the nature of the morbid change in the blood, which constitutes scurvy?

It was held by early writers on scurvy that the blood in this disease is loose and dissolved; and the same idea has been repeated by the most distinguished of our modern physiologists, who have stated in more precise language that the globules are dissolved in the serum. Such, however, is not the case. The serum is not tinged with the colouring matter of the blood, and the globules, examined under the microscope, present no perceptible change. Even in advanced stages of scurvy, the blood separates into serum and clot as rapidly and as perfectly as healthy blood; and in some cases the clot is very firm, and much buffed and cupped—the consequence, perhaps, of a diminished proportion of the globules to the fibrine.

The result of some analyses of scurvy-blood, made for me by my friend Mr. Busk, shows that the proportion of hematosine is much diminished, while that of the fibrine, of

the albumen, and of the salts, is increased. The diminished proportion of hematosine, or of the globules, might have been inferred, without any analysis of the blood, from the general paleness of the tissues; and it affords a satisfactory explanation of the tendency to swoon, so constantly observed in scurvy; for physiologists have shown that the vivifying influence of blood on the nervous system is mainly due to the globules. But a diminished proportion of globules affords no explanation of the spongy state of the gums and the great tendency to hæmorrhage; for those symptoms are not met with in chlorosis, in the advanced stage of granular kidney, and other diseases, in which the proportion of globules is likewise diminished. On the contrary, it appears from the researches of MM. Andral and Gavarret, that in most diseases in which there is a marked tendency to hæmorrhage, the chief peculiarity of the blood is an excess of globules. The change of the blood that constitutes scurvy must, then, be of more special kind than a mere diminution of globules.

This change cannot consist in diminution of albumen or fibrine, for analysis shows that no such diminution exists. Besides, in granular kidney, the blood is often much drained of its albumen without producing any scorbutic symptoms.

If, as the origin of the disease seems to show, the fault of scurvy-blood is deficiency of some of its constituents, the most probable supposition is, that this deficiency is in the salts; that some saline principle, small perhaps in amount, but important in agency, and necessary for the nutrition of some tissues, is wanting. The tissue that seems to suffer most is that of the small blood-vessels, which become weak and easily ruptured. The spongy state of the gums, the fungoid granulations of ulcers, the hæmorrhage that takes place in the lower extremities, where the vessels are exposed to additional pressure from the gravitation of the blood, may perhaps be explained by defective nutrition of the small vessels. The hair, the nails, the transparent cornea—parts that suffer in animals kept on a diet deficient in nitrogen—are not affected in scurvy. The hair does not fall off the cornea does not lose its transparency.

We have another clue to the principle wanting in scurvy-blood, by considering the source from which it may be restored; namely, the succulent juices of vegetables and fruits. These juices—the preventives and specific remedies of scurvy—contain albumen, fibrine, and organic acids in combination with inorganic bases. Their virtues cannot depend on their albumen or fibrine, because these are in excess, rather than default, in scurvy-blood. They must depend on some of the incidental principles with which the

albumen and fibrine are associated. The radical importance of such principles, both in plants and animals, has been well shown of late by Prout, Liebig, and other chemists, and might have been inferred from the constancy of their presence, and from the fixed proportion which certain of them bear to the other constituents of particular tissues.

The principle, whatever it be, is common to the juices of a great variety of vegetables and unripe fruits; and seems to reside in the juices of the plant only. All vegetables and fruits noted for their antiscorbutic properties are very succulent; while vegetables, and fruits that are dry or farinaceous, have very little power in preventing scurvy. The process of drying seems indeed to destroy the antiscorbutic properties in plants which have them in the highest degree. Kramer tells us that he tried a great variety of dried plants to no purpose; and that, when scurvy prevailed in the imperial army in Hungary, in 1720, a large supply of the most approved antiscorbutic herbs, dried, were sent there by the College of Physicians at Vienna, but they proved of no service.

The antiscorbutic property seems to be impaired by the action of a strong heat. All men who have had much experience in the treatment of scurvy maintain, that the antiscorbutic virtue of vegetables is greatest when they are eaten raw; and that herbs in the form of salads are more efficacious than when boiled, or in any way prepared by heat.

Dr. Lind recommended that lemon-juice should be taken to sea, in form of a *rob*, made by evaporating the juice, by a slow heat, to the consistence of thick syrup. It was extensively tried, but found very inferior in efficacy to the fresh fruit. In consequence of this, Sir G. Blane recommended that the juice should be preserved by the addition of a small quantity of spirit, without the aid of heat; a plan now generally adopted. Juice so prepared seems equally efficacious with the fresh fruit.

The antiscorbutic properties of some fruits seem also to vary with the degree of maturity. Dr. Trotter says, that having observed scorbutic slaves throw away ripe guavas, while they devoured green ones with much avidity, he resolved to try if there was any difference in their effects. For this purpose he selected nine blacks affected with scurvy in nearly equal degree. To three he gave limes, to three green guavas, and to three ripe guavas. They were kept under the half-deck, and served by himself two or three times a day. They lived in this manner for a week; at the end of which, those restricted to ripe guavas were in much the same state as before the experiment, while the others were almost well.

The process of vinous fermentation seems also to impair considerably the antiscorbutic

property. It seems well established that wine has less efficacy in preventing scurvy than grapes; beer less than infusion of malt; rum less than molasses.

The acetous fermentation, on the contrary, seems in no degree to impair the antiscorbutic virtue. Pickles have equal efficacy with the fresh plants. Sour kroust, made by subjecting sliced cabbages to the acetous fermentation, long had great celebrity as a preventive of scurvy.

It would seem, indeed, that the antiscorbutic principle may be even developed by the process of acetous fermentation. An article of diet, called by the Scotch *sooins* or *sowens*, made by subjecting oatmeal to the acetous fermentation, was considered by Sir J. Pringle and Sir G. Blane as a powerful preventive of scurvy; while it seems well established that oatmeal itself has no such virtue.

All these circumstances render it probable that the antiscorbutic virtue depends on the organic acids; or on some salt that enters the system only in combination with such acids. The latter supposition is the more probable, because the acids, pure, have much less efficacy in preventing scurvy than the vegetable juices from which they are derived. Lemon-juice evaporated to the consistence of syrup, as originally recommended by Dr. Lind, was found very inferior to the fresh fruit; and the crystallized acid, after being extensively tried, was renounced in favour of the juice preserved simply by the addition of a certain proportion of spirit. The notion that it is the mere acid that prevents and cures the disease, has, indeed, done much mischief, by leading men to infer that any other vegetable acid would do the same; and hence to trust to vinegar, to the great sacrifice of health and life among their seamen, long after experience had shown that it is a very inadequate substitute. Dr. Lind, in the middle of the last century, when scurvy proved so destructive in our fleets, remarked that few ships had ever been in want of vinegar. Testimony to the same effect has been given by other naval physicians. Sir G. Blane tells us that vinegar was liberally supplied to our fleet in the West Indies in 1780 and the two following years; but that, notwithstanding this, they had great losses from scurvy. Dr. Trotter, in his account of the health of the channel fleet, in 1795, says that vinegar was carefully served to the messes of the seamen, throughout the squadron; yet in those ships in which men took it in large quantities, it was not observed to retard the progress of the disease.

These facts render it probable that the antiscorbutic property does not depend on the mere acid of vegetables and fruits, but on some salt that enters the system only in combination with it.

In the history of scurvy we find frequent instances of the great craving that almost always exists for substances much required by the system. Dr. Lind says that he has often observed, upon seeing scorbutic people landed at our hospitals, that the eating of oranges and lemons was attended with a pleasure more easily imagined than described; and the same remark has been made by other naval physicians. Bachstrom, in an account he has left us of the ravages of scurvy during the siege of Thorn, in Prussia, in 1703, says that when some of the coarsest vegetables were sent to the town by the besiegers, for the use of a particular family, they were seized on by the officers at the gates, and eagerly devoured as the greatest delicacies. A still more touching instance is given in the narrative of the famous voyage of Lord Anson, when, on their arrival at the island of Juan Fernandez, the grass even was considered a dainty, and eaten with avidity by the scorbutic sailors.

I cannot conclude these remarks on scurvy without calling attention to the need there is of some legislative enactment to render compulsory an adequate provision of lemon-juice to our merchant-seamen during long voyages. A measure of this kind could not be considered meddling or vexatious; for surely no one can claim the privilege of keeping men, for whom he has agreed to provide, on a diet which experience has fully shown to be inadequate to the maintenance of health.

I would also earnestly urge the importance of making a certain proportion of succulent vegetables an occasional article of food in jails, poor-houses, and especially in lunatic asylums; in fact, in all establishments where persons are kept a long while on a diet regulated by principles of economy, and subject to little variation.

In the provisioning of garrisons likely to be besieged, or of troops stationed in districts that have been laid waste, or where the winter is long and severe—in all cases where a difficulty of procuring fresh vegetables is likely to arise—I would recommend that lemon-juice, as in the navy, be provided instead. The history of the siege of Alexandria in 1801, of the French army of the Alps in 1795, of our own troops at the Cape of Good Hope in the autumn of 1836, and of some late campaigns in India, show that such advice is not altogether uncalled for.

## SWEDENBORG ON THE INTESTINES.

*To the Editor of the Medical Gazette.*

SIR,

IN a late number of the Penny Cyclopædia of the Society for the Diffusion of Useful Knowledge, the claims of

Swedenborg\*, as a human physiologist, are urged at length, and some account given of his peculiar doctrines. He is also mentioned with approbation in Fletcher's *Physiology*, and in the *Medical Repository* for 1829. Prevost and Dumas, in France, have lately taken the pains to give a critique on his chemical theories. In Germany, Wolfgang Menzel relates that Goethe was a student of his works, which is, *a priori*, rendered probable by the fact, that something very like Goethe's morphological theory pervades the system of Swedenborg. The *Monthly Magazine* for May and June, 1841, and the *British Magazine* for the current month, also contain some notices of Swedenborg as a writer on physical science.

These facts induce me to send you a translation of Swedenborg's chapter on the Intestines, taken from his *Regnum Animale*. I am far from asking any one to assent to its doctrines. I place it before you simply as a medical curiosity, highly picturesque and almost epic in its march—a remarkable display, in method and results, of Swedenborg's peculiar powers of mind; belonging, apparently, neither purely to Swedenborg's time (1744), nor to our own. Should it happen to contain any thing solid, as well as curious, our liberal profession will no doubt spontaneously perceive and acknowledge it.

I am, sir,

Your obedient servant,

MEDICUS-LONDINENSIS.

London, July 4, 1842.

#### ANALYSIS.

The viscera or integral parts of the body may be compared to lakes in a kingdom, which arise from running streams, and empty themselves into the sea by one or several rivers; or to fountains, produced by the confluence of subterranean veins, which go forth in single channels, and afterwards spread in all directions in numerous rivulets. Thus the heart, which is the reservoir and whirlpool of the blood of the whole kingdom, grows from numberless invisible veins, uniting into larger ones, and presently whirls back its blood into the body, and distributes it universally by the arterial streams. Thus the lungs, made up of the

bronchia and the vesicles, pour themselves forth incessantly on every side, either by currents of force and motion, or else, as in worms, by an infinite number of aëriferous tubes. Thus the brain, which is a globular composition of the minutest arterial threads and cortical granules, puts itself forth universally by the medullary and the nervous fibres. Thus the stomach, made up of a peculiar internal coat of its own, of the tunics of the œsophagus, and of membranes consisting of vessels, fibres, ducts, and papillæ, discharges itself into the intestinal tube, as a lake into a river, or a fountain into a large stream; and the tube, so formed, straightway pursues a course full of winding turns and meanders. This origin of the intestines causes them to be a kind of new, continued, or consecutive stomach; and it gives them, as their condition of existence, the same nature as the stomach, and similar substances, powers and forces, modes, actions and modes of action; for they make common cause with the stomach, and perform a consecutive and proximate function. Since the stomach is thus continued in the intestines, we may derive instruction on nearly all points from the one concerning the other, both with regard to structure, with regard to motion, and with regard to chemical action.

With regard to *structure*: the membranes of the intestines are of the same number and of the same nature as those of the stomach; and the blood-vessels, muscular and nervous fibres, ducts, siphunculi, glands, papillæ, &c. have a similar origin, nature, and determination, in both. The convolutions and sinuosities of both—the rugæ, furrows, and grooves—have nearly the same structure, spire, and fluxion, but with one marked difference, that, on the concave surface of the stomach, the spires are developed into equal solids, which form canals, and are closed in by (the) coats (of the stomach), and perform the same gyres in a volume as the stomach performs on its surface; so that it seems as if the stomach did no more than unfold continuously below the pylorus. This similarity in structure produces a similarity in determination of *motion* and in form of fluxion, which, in both the stomach and intestines, is perpetual-circular, or spiral, and continually

\* This is a most difficult work to procure; but the British Museum contains it.



maintains an intrinsic relation of poles, centres, axes, large circles, and lesser diametral circles.

With regard to *chemical action*: all the operations of this continuous duct, which is the grand alimentary canal or nutrient duct of the body, from the threshold of the lips and mouth to the end of the intestines, proceed in series, and are performed in order: its operations being, in fact, successive, in the same manner as its articulations. The lips receive the crude, undivided and undigested food; the teeth comminute it; the tongue and the fauces further reduce it, and transmit whatever is not properly reduced and dissolved to the pharynx and œsophagus. These, in their turn, transmit it to the stomach, which dissolves and digests it still more perfectly. The stomach sends the portions that require further dissolving, digesting, seething and extracting, through the pylorus into the small intestines: and these reject the undivided and unexpressed portion of their contents through the valvula coli into the large intestines. Thus each articulation constantly delivers its impure, exhausted, and recrementitious materials to the articulation which succeeds it: and thus the operations are in the same successive order as the articulations.

The consequence is, that the small intestines receive nothing from the stomach but its effete, vapid, rancid and putrescent food, or rather refuse, which they, like the stomach, mix up, circulate, agitate, squeeze, strain, grind, macerate, seethe and extract, also expel, evaporate and sublimate through foramina and ducts, their appointed channels; but as these materials are more refractory and obstinate, the intestines chastise them with a more vehement motion, with a grosser heat, with a longer delay, and with a more acrid salivary menstruum. The intractable portions they eject through the valvula coli into the large intestines, where they are chastised with still ruder violence, and subjected, if we may use the expression, to the lash and the rack. Finally—the residue that no process can cleanse—foul, filthy, worthless, a useless burden—the caput mortuum and fæces of the belly—is cast, by the large intestines, into the sink of the rectum; and, after the extremest infliction, it is there thrown out, by the common

effort of the whole duct, and the specific effort of each articulation, and utterly discharged from the body. In this manner the intestines do no more than continue and gradually complete a work, already begun and prosecuted in the antecedent laboratories.

Thus each articulation of the alimentary canal has its own peculiar department to perform, in the series of chemical or chylopoietic operations, agreeably to the law, that each, in effecting and producing something particular for itself, also effects and produces something general for what comes after it, and something most general for all in the series. For this reason the alimentary canal is not only distinctly articulated, but even distinctly subarticulated; the intestines into the small and the large; the small intestines into the duodenum, the jejunum and the ileum; the large into the cæcum, the colon and the rectum; and perhaps the subdivision may take place again, even many times: always with the same relation of successiveness, and the same unbroken continuity of effect.

The saliva also increases in digestive power and sharpness, in a similar successive series, proportionately to the acting and resisting forces. It is mild and limpid in the anterior part of the mouth, comparatively thick in the palate and the pharynx, fruitful and potent in the stomach, but acrid in the intestines, where it is no longer called saliva, but bile; being, however, tempered by the comparatively mild and homogeneous pancreatic juice, to meet every natural requirement, and to correspond to the forces and conditions of the intestines as active, and of the food as passive. The last species of saliva, adapted for macerating the fæces, distils and runs continually from the vermiform appendix into the cæcum and colon.

The vermicular movements of the intestines perform alternate and reciprocal gyres, synchronously with the œsophagus, the stomach, the lungs and the brains; so that the stomach and the intestines digest and rise into action every time the brains animate and the lungs respire. The brains are ever renewing these reciprocal movements of the intestines from within by the fibres and spirit of the par vagum and intercostal nerves; the lungs, from



without, by the vertebræ, the ribs, the sternum, the diaphragm, the peritoneum, and their muscles; and the stomach, by the pylorus, and by (its) continuity (with) and influence (on the intestines).

The vermicular motion of the intestines, like the peristaltic motion of the stomach, is in constant flux and reflux from one orifice to another, as it were from stage to stage; the stomach from the cardia to the pylorus; the small intestines from the pylorus to the valvula coli; and the large intestines from the valvula coli to the sphincter ani, to and fro. But the order is not the same in the large as in the small intestines; for while the duodenum, jejunum and ileum are in their onward career, wreathing their volumes forwards to the valvula coli, the cæcum and colon are wreathing theirs backwards to the same point. Consequently the ends of the small and large intestines both meet in this valve, that is to say, in the cæcum, as a centre; and at the same time, or during diastole; but during systole, they mutually recede from the valve. Hence the singular structure of this valve, the bulging form and great capacity of the cæcum, the evident articulation of the colon and ileum therein, and the meeting of the ends of both intestines in the focus of (their) gyrations.

The simple expansion and contraction of the muscular coat, and thence of the intestinal tube, produces of itself, not only the vermicular gyration, but also the reciprocation and concurrence of the intestinal movements. For the small intestines are so exceedingly sinuous, that they cannot expand without a change of place, and a spiral evolution following the course of their sudden turns and reflexions; and the colon likewise (passing in a large circle round the convolutions of the other intestines, and attached throughout its course to the neighbouring organs), can undergo extension only where some free space is afforded, or like the ileum, towards the cæcum. The determination of the extension is the sole cause of the order and concentration spoken of above. Were the case otherwise, the reciprocating gyres of the intestinal tube could never exist, much less subsist.

The intestines alternately dilate and contract, and when they dilate, they also extend, and when they contract

they also retract. This is the primary source of their motions, and the wheel of the machine. The rest of their actions harmonize therewith, and result mechanically, as in an automaton, from organic form and connexion of parts, precisely in such wise as the grand principle of use determines.

The gyration of the intestines is apparently so erratic and confused, that it seems to be destitute of all form, or at least to be perfectly inordinate and lawless; for the intestines are convoluted and complicated together, and in attempting to disentangle them, our ideas and analyses themselves are apt to be lost in their labyrinthine mazes. And yet it is important that the knot should be untied, for it is essential to an understanding of causes. We must regard the gyration as analogous to the folds of the stomach, and to the convolutions of the brain; in which there is nothing angular and rectilinear—nothing but what is perpetual-circular or spiral. This spiral convolution, or organic form, unlike the circle or sphere, does not respect a fixed, immoveable, single centre, with convergent radii; but instead thereof, a circle, with spires for radii: consequently, the centre of this sphere is a circular gyre, whereby, and as it were afar off, it regards a fixed centre, which is that of its central circle. Wherefore the intestinal gyre respects the fimbriated border of the mesentery (which is of a circular form), and mediately thereby the receptaculum chyli, which constitutes the innermost centre of the sphere, and is fixed and immoveable, because it is the centre of a circle. The spiral form has the following properties. Its radii or semi-diameters, which are directed to the central circle, are all of them circumferences, and *vice versa*, its circumferences are all of them diameters; and with sinuous flexure they are perpetually rolling to and again revolving from that moveable centre. The volutions of this form always describe some everlasting curve, related to the circle; either an elliptical, parabolic, hyperbolic, or some other geometrical curve, but ever evolved, after the manner of the cycloid. Hereby, the intestinal gyre draws forth every property and peculiar virtue that resides in the circle or curve, and constantly converts it to the use intended by nature. And hence this form derives the power of infinite variation; con-

sequently, of accommodating itself not only to every space, under every volume, but to every possible use and end. No wonder, then, that the idea of the intestinal gyration, with its infinite varieties, at first appears inextricable, and eludes analysis by the measures, methods, and figures of geometry, for even in its lowest form it utterly transcends them.

From what we have stated, it follows, that the gyre of the intestines induces on their contents a kind of endeavour and gravitation from centre to circumference, and from that circumference to the centre of the circle, or the common innermost centre. The intestines first throw all their contents, from their axis, or continued centre, towards their concave surface or parietes; which produces a perpetual mingling of both alimentary and excrementitious materials, and a moistening of the whole with saliva; accompanied by a tendency in the materials themselves, not only to change their places, but also to apply themselves closely to the circumference of the canal, and to pass through the pores and foramina that there meet and open for them, to an ulterior destination. But as soon as the chyliferous essences, by this headlong career, have arrived at the bounds of the intestines, or in the cellular coat, the former tendency (*niscus*) is supplanted by another, from circumference to centre, in a word, from the borders of the mesentery, by rectilinear radii, to the receptaculum chyli, which is the centre alluded to. A two-fold tendency and impetus thus results from this gyration of the intestines.

Now, since the dominant tendency of the vermicular rotation of the intestines is centrifugal, it may seem as if no force was present to urge their contents onwards from the pylorus to the rectum. But let it be remembered, that the intestines are continually expanding and contracting. By these movements, as the stomach by its corrugations, they send their contents forwards, from place to place, to the intended goal; where they are driven down and discharged by the forcible compression of the particular muscles of the intestines, of the common muscles of the abdomen, and by the joint effort of all the viscera of the body.

Hence it appears, that neither the esculent nor the fæculent materials

that are enclosed in the intestines, follow their own particular laws, but that they are subject to the laws of the intestines; and no longer act by their own gravity, as in the general sphere (nature), but passively obey the motion of the containing and surrounding viscera; and direct their tendencies, and determine their forces—whether such forces result from gravity, or from any other cause—to the centres of those viscera. The animal microcosm imitates the macrocosm in all its properties, and when it receives anything from the visible and circumambient world, it withdraws it from the power of that world, and subjugates it and appropriates it to itself. Wherefore, to prevent illusion, in our investigation of the organized animal body, we must put aside the ideas that are derived through the senses from without, touching the extension of the government of the general sphere (of nature) to the interiors of the animal world; and simply direct our ideas to the parallel consequences of similar causes within.

The *duodenum* commences from the pylorus, and makes a short course with several curvatures; leaving an open field for the rest of the intestines to produce and perform the gyres that are best adapted to nature's uses; and thus it inaugurates the intestines into their spiral form and motion. It receives the exhausted and undigested portions of the contents of the stomach, and constantly forces them downwards into the jejunum: it besprinkles them with mixed bile and pancreatic juice, corresponding in quantity and quality to its own constitution and nature, and to that of the viscera, the blood, the spirits and the food. It absorbs their first products; one part of which it sends to the veins (making use even of the arteries for this purpose), and thence to the vena portæ: another part to the tunica cellulosa Albini, and thence, through the lacteals of the mesentery, to the receptaculum chyli; in both cases by means of glands, papillæ, pores, and siphunculi: a third portion, less pure, to its second coat, the tunica Ruyschii cellulosa, and thence to the peritoneum and the external circumference of the viscera. It rolls the remainder into the jejunum and the ileum. Sometimes, when this intestine is irritated, it spews out the gifts of the stomach, and even folds back into itself, and vomits the cystic bile and the pan-

creatic juice into the pylorus. Thus, like the stomach, the duodenum is capable of an inverse movement, contrary to the ordinary course of its spires.

The *jejunum*, busy in the foci of the intestinal gyrations, performs the part of a secondary stomach. It receives the materials brought by the duodenum, with their mixture of mild and acrid saliva; it rolls them spirally, upwards and downwards, with equal ease; it tumbles them over with apt facility, and mingles and entangles them, and applies them to its innumerable syringic pores, and greedily and gladly imbibes them; selecting, however, only what suits its purpose. The pure portion it sends to the mesenteric glands; the portion intended for purification, to the liver. It gives no respite, but thrusts down whatever it does not absorb, with rapid rolling and redoubled forces; and delivers it for purification to the ileum, which is at once its partner and successor in functions.

The *ileum*, with its manifold convolutions, receives, retains, macerates and agitates these jejune materials; and after seething and squeezing them, it absorbs their liquid products and chylous juices. The remainder it pours into the *cæcum* through the valve, which the colon now opens; or should it fail to do so, then the ileum attempts to open it, sometimes without effect; and meanwhile, it wrings the ingesta so long as they remain in it. The convolutions and spires of this gut sometimes become knotted together (from causes either remote or proximate), producing the affection called *passio iliaca*.

The *cæcum* is connected with the ileum above, and with the colon beneath: it is the common hall, the point of meeting and the hinge of these two intestines—the goal of the gyratory course of the small intestines, and the starting-place of the outward career of the large intestines: a short, capacious and dilatable sac. Every time the ileum expands, it forces its terminal extremity, and its contents, into this cup-like intestine; and the colon moving up to meet it, receives and swallows its egesta. The *valvula coli* opens and shuts the door, and guards against, and forcibly prevents, any reflux of materials from the large into the small intestines.

The *appendix cæci vermiformis*, like  
766.—xxx.

the tongue of this balance of motion, opens its pores, and expands its cavity, synchronously with the *cæcum*; and pours a new liquid, adapted for anointing and lubricating the wavy folds of the colon, and particularly for macerating the *fæces*, into the fundus of the *cæcum* and the gorge of the colon. This liquid is proximately obtained from the cellular coat of the intestines; remotely, from the cellular coats of the peritoneum and abdominal viscera. The appendix *cæci* draws off and discharges the useless and harmful portion of it, as the *cæcum* itself draws off and discharges the alvine *fæces*.

The *colon*, much thicker and stronger than the preceding intestines, emerges from the end of the gyre of those intestines, at once superior and internal to it, and presently passes to the circumference; and after performing gyres, or making a circular revolution at two different stages of its course\*, and attaching itself to the several viscera of the abdomen, and giving them, if we may use the expression, the final embrace, it passes down to the last and lowest parts of the body, and terminates in the rectum. Unlike the preceding intestines, it bestows no mild treatment, no gentle correction, no tempered digestion, on its now putrid and filthy contents; but it dashes them together and chastises them, and wears them down by prolonged and loathsome maceration, and thus loosens and wrings out their last residuum, to prevent them from carrying out with them a single particle of the chyle. To fit the colon for these operations, it is fortified with robust fibres and ligaments, attached to numerous organs, and grooved and channelled with thick furrows, corrugations, and lacunæ; that so it may continually punish its outlawed contents with stripes and imprisonment.

The *rectum*, commencing at the termination of the colon, lictor-like inflicts the last torments on the outcast, stinking and worthless *fæces*; and expels them to their doom in the jakes. It is, therefore, strengthened with muscles, divided by grooves, and perforated with lacunæ; and united in the bonds of fellowship with all the other outlets, which, like itself, proscribe and eject either superfluous or effete materials from the system.

\* Cf. Eustachii Tab. ii. fig. 6.

## ON EPILEPSY.

By J. GRANTHAM, Esq. Crayford, Kent.

(*For the London Medical Gazette.*)

THERE is no disease more complex than epilepsy, which I think is in no small degree attributable to want of arrangement in its pathological description. Many cases have been reported illustrating its effects, but only a few have rightly described the various causes which produce it. By the present theory of the nervous system we can the more readily understand the effects of epilepsy in reference to their many causes, and without assuming too much we can also discern the different effects, and trace them to their different sources. Pathologists, up to this time, have failed to ascertain the exact condition of the brain or spinal column, which might probably be said to attend every case of epilepsy. M. Foville was forced, after the dissection of a great many brains and spinal cords, to avow that anatomy revealed neither the essential cause nor the constant effects of the disease. The Wenzels dissected a great number of cases of epilepsy, and invariably found a lesion of the cerebellum. Dr. Stokes has advanced a very excellent definition of the pathology of the nervous system, in his work. He says: When we reflect on nervous phenomena, and consider how occult, how mysterious, the properties of those organs which give rise to them are, we are struck with astonishment at the discrepancy between cause and effect. No medical man has ever witnessed a case of confirmed tetanus or hydrophobia without being impressed with a conviction of the imperfect and limited state of our knowledge of nervous diseases. It may be very possible that in these neuroses the change, though so slight as to escape our means of detection, does absolutely occur; and yet such is the nature of nervous phenomena that we must admit that great and extraordinary effects are produced by very slight causes. Do we see any thing like this in nature? any remarkable alteration in properties depending upon apparently slight causes? We do. We see extraordinary changes taking

place in the characters of various inorganic substances (to which I need not particularly allude), and there is no reason why the same thing should not occur in organic structures. In considering the doctrine of isomerism, I should be induced to think it throws some light on this obscure subject. In chemistry, it is a well-known, though singular law, that the properties of two bodies may be essentially different, at the same time that their respective component elements are, as far as our knowledge goes, identically the same: and the change, whatever it may be, appears to result, not from the abstraction or removal of any of the component atoms, but from the peculiar juxtaposition. Now it being admitted in chemistry that many bodies having the same constitution possess totally different properties, and this difference being explained by the different position of their elements, it does not seem strange if the same thing should take place in the phenomena of organised beings; and if this be the case, we have a key towards the elucidation of the nature of these neuroses, and can conceive how an analogous change—a difference in the arrangement of the molecules of the component parts of the nerves or their centres—may produce new modifications of their properties, without making any distinct change in their nature, or adding or abstracting a single molecule. I am much inclined to adopt the opinion of those who think that in the neuroses a peculiar organic change actually takes place, though we cannot demonstrate its existence; because to reason on the phenomena of life, independently of organization, is to plunge blindly into the hypothesis, and retrace the errors, of an antiquated and exploded school.

Were I to speculate on epilepsy, it would be in assigning it to a suspension of the electrical or nervous action of the brain, thereby causing an irregular supply of irritability to the muscular fibres of the body. Epilepsy must be regarded as an effect incidental to abnormal function, or diseased action of some portions of the brain or spinal column, and arising from many causes; therefore, for the sake of order, and it will be in accordance with structure, I propose dividing epilepsy into three kinds:—



First, Cerebral epilepsy.

Secondly, Spinal epilepsy.

Thirdly, Cerebro-spinal epilepsy.

The causes of cerebral epilepsy are as follows:—

1. Venous congestion.
2. Effusion of serum or blood.
3. Inflammation of the brain or its membranes.
4. Want of compactness in the bony compages of the skull\*.
5. Atrophy of the brain.
6. Hypertrophy of the brain.
7. Induration of the brain.
8. Softening of the brain.
9. Dentition.
10. Offending matters in the stomach.

The causes of spinal epilepsy are as follow:—

1. Atrophy of the spinal cord.
2. Hypertrophy of the spinal cord.
3. Induration of the spinal cord.
4. Softening of the spinal cord.
5. Effusion of serum within the theca vertebralis.
6. Inflammation of the membranous portion of the spinal cord.
7. Intestinal irritation.
8. Hepatic, renal, and uterine deranged function or diseased action, and masturbation.
9. The commencement of measles, scarlet fever, small-pox, or of any epidemic.
10. The imbibition of lead†.
11. The climacteric changes.

Cerebro-spinal epilepsy is only a more advanced stage of the two former, and is indicative of a fatal termination.

*A case of epilepsy caused by atrophy of the spinal cord.*

July 7th, 1840, I was sent for to see a child of Major C——, aged seven months, who was said to be suffering from teething, with hepatic and intestinal derangement. The child, from the age of six weeks, had been in the habit of having numerous doses of mercurials, and as to incisions of the gums I know not how oft they were practised. He suffered from the effects of porrigo larvalis; and, from what I could learn, the child never used the lower extremities as other children do at his age. His intellect was of the best order, chest well formed,

and he at times enjoyed the highest feeling of health and spirits. From the age of three months the child had slight convulsive extension of the extremities, with pallidness of the countenance, which, despite of various means, gradually increased, until confirmed epilepsy supervened. In one of these attacks, on Jan. 23d, 1841, he died. On examining the body the following appearances were observed:—On opening the spinal column the theca was found adherent to the anterior portion of the canal throughout, but more so in its lower third. The theca was distended with serum from the sixth dorsal vertebra downwards. The pia mater was highly injected with red blood from the commencement to the termination of the cord. The spinal marrow was softer than natural, and in circumference only one half its natural size, with great diminution of size in the anterior and posterior spinal nerves at their exit. On opening the cranium the dura mater was found healthy; the convolutions of the brain natural. On slicing the cerebrum there were numerous exudations of red blood: the pia mater and tunica arachnoidea healthy; the right ventricle contained about three drachms of clear serum. The liver was enlarged, and covered with purple patches; above a pint and a half of straw-coloured serum was found in the peritoneum; the intestines healthy; the mesenteric glands enlarged.

*A case of epilepsy caused by taking small portions of the oxide of lead in water.*

Mrs. C——r, aged 40 years, presented the following symptoms:—A leaden dull biliary appearance of the countenance; pain over the hepatic region, extending to the middle portion of the sternum; imperfect vision; noise in the ears; disturbed sleep; indefinable general uneasiness; great fear; loss of memory; embarrassment and slowness of the mental faculties; pulse 90, small and hard; tongue of a buffy coated appearance; gums blue; skin inactive; urine small in quantity, and of a dark brown colour, depositing a brown laceritious sediment; the fecal matter resembling that from a patient under the effects of jaundice. These symptoms gradually increased in despite of bleeding, mercurials, turpentine, counter-irritation, &c. The loss of flesh

\* Vide MED. GAZ. vol. XX. p. 910.

† Vide Treatise on the Diseases occasioned by taking Lead, by L. Tanquerel, des Planches, M.D. under the head Encéphalopathie.



and partial paralysis supervened until epilepsy came on, which I have no hesitation in believing to be a fatal result. Although a patient may live for four or five weeks after the first epileptic attack, yet it will terminate fatally.

On examination of the head on the 16th April, 1836, I found the ossa frontis much thickened; the dura mater adhering and inflamed; the convolutions of the brain shallow; the veins engorged; the cortical and cineritious portions of the brain tinged with spots of blood; the lateral and third ventricles of the brain filled with a transparent fluid, which extended into the spinal column; the tunica arachnoides healthy; the pia mater very much inflamed.

Crayford, Kent, June 2<sup>d</sup>, 1842.

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OBSERVATIONS  
ON THE  
ADJUVANTIA OF THE SYSTEMIC  
CIRCULATION.

By EDW. O. HOCKEN, M.D. &c. &c.

(*For the Medical Gazette.*)

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THE relative situations of the heart, the arch of the aorta, and the ascending and descending venæ cavæ, have always impressed me with the idea of the physical assistance which must be derived from this source to the general circulation. The left ventricle is engaged constantly in pumping the arterial blood into the highest point of the main blood-vessel, which holds a relation to the half of the body below the heart, which the highest point of the main tube of a series of water pipes holds to the smaller divisions of such tubes. The fluid included in the tubes, however complicated and minutely subdivided, would still find its level in each tube, viz. the level of the highest point from which the water started. But supposing it were desired to raise the included fluid higher than the reservoir from which the water was obtained, it might be effected by some power which constantly pumped the fluid into the main pipe, raised to a convenient height above the level of the water in the reservoir. Now this

is exactly the state of the case in those parts of the body below the level of the arch of the aorta; the blood is constantly pumped into a tube higher than the vessel which returns the blood from the minute and almost numberless subdivisions, into which the main tube divides, before they again reunite in the venous system, into larger and larger vessels, to terminate in the ascending cava, and that in the right auricle of the heart.

If these premises be strictly correct, it follows, as a natural induction, that there would be a constant tendency in the blood, contained in the venous system, to reach the level of the highest point of the arch of the aorta; but that, as the vena cava inferior terminates at a point inferior to the highest point of the arch, the blood must constantly flow into the right auricle of the heart itself, inasmuch as it cannot strictly obey the impulse which regulates it, in accordance with the known laws of contained liquids.

In the superior half of the body, that half which is superior to the arch of the aorta, an exactly opposite state of things exists, and the power which aids the systemic circulation in these parts is very different in its *modus operandi*. Here the vena cava superior lies inferior to the highest point of the arch of the aorta, and constitutes the longer leg of a syphon-like series of tubes.

The operation of a syphon is familiar to almost every one, and its laws are as simple and constant as the circulation of water in a series of tubes. The greater weight of the fluid in the longer leg of the instrument as constantly replenishes itself from the shorter leg, by the operation of the atmospheric pressure, or suction, as the longer leg loses the contained fluid from its open extremity.

The vessels which pass off from the arch of the aorta to this superior half of the body, constitute the shorter limb of the vascular syphon, and their aggregation in the vena cava superior the longer leg of the instrument. It will be obvious that, if we regard these vessels as connected in the light I have now depicted them, there will be a constant power of suction in operation—an influence derived from atmospheric pressure—which exerts a retrograde effect. By it all the vessels placed be-

hind it, in point of circulation, will have their contents hurried onwards from the vessels forming the shorter leg of the syphon into the series constituting its longer limb, and from this will be discharged into the right auricle. Hence we shall find that a power of suction really does influence the circulation of the upper parts of the body, independent and co-operative with the suction power of inspiration, and may, in this manner, help to account for the much greater danger of air being drawn into the venous system of this part of the body than any other—a fact better known than explained, inasmuch as the power of suction derived from inspiration affects equally the venous system of the inferior parts of the body as it does the superior.

A paper appeared some few weeks since, from the pen of Mr. Paget, in the *MEDICAL GAZETTE*\*, in which are contained the results of some experiments on the measurement of the division of arteries with the trunk from which they sprung. His conclusion is, that the old rule of the enlargement of the arterial canal, as trunks divide into branches, is true for the majority of cases, though the enlargement is less than has been generally supposed. But there is a constant exception to the rule, where the aorta divides into the common iliac arteries; for there, or the division next lower down, the stream is always contracted. The inquiry, he says, is full of promise, and success will be the certain reward of labour.

Now, although such a contraction as Mr. Paget has mentioned may occur to fulfil some definite purpose in the parts placed behind it in the order of circulation, who can for a moment doubt that the confined calibre of the smaller vessels continues to exceed the larger divisions more and more in proportion as they decrease in size, so that the capillary system ultimately bears no comparison to the calibre of the arch of the aorta? When we contemplate the vast extent of the capillary system of vessels, we may well compare their combined area to the base of a cone, the apex of which is formed by the cavity of the aorta, and which, if they did not possess an inherent power of

*progressive contraction*, combined with the forces I have already dwelt upon, would furnish a very material impediment to the heart's action, and to the progressive circulation of the blood.

It appears to me that the relative situations of the heart and blood-vessels to each other, by facilitating the circulation in the manner which I have explained, fulfil more important intentions than might at first sight be imagined. The mere physical laws of the operation of a syphon, and of liquids finding their own level, when acting through the arterial and venous systems, would produce the circulation of the arterial and venous blood, by their sole and simple agency (although certainly in a slow and imperfect manner), quite independent of the actions of the heart, except as an engine for propelling the column of fluid to the highest point of the arch of the aorta. Now, if of their own unaided power these causes are capable of moving the blood, it must be obvious that they produce a freedom from obstruction and restraint which will most materially favour the operation of other and more powerful causes tending to move or circulate the vital fluid. When we take into consideration the freedom with which the blood does circulate, and the rapidity with which it performs its journey from the heart back again to the same source, we can scarcely deny that some cause must be in operation to facilitate its course, and to account for the really most extraordinary haste which it displays.

The unprejudiced mind will, I think, allow that the causes I have mentioned are the most probable sources of this freedom from obstruction, and that I make but a legitimate induction from facts, when I conclude that the relative situations of the heart, arch of the aorta, and the *venæ cavæ*, were designed, among other purposes, for facilitating, to no inconsiderable degree, the general or systemic circulation.

I conclude these brief considerations with the hope that I have proved that these physical causes may and ought to be enumerated among the *adjuvantia* of the systemic circulation.

15, Southampton Street, Covent Garden.

\* July 8, 1842, pp. 553—560.

## MEDICAL GAZETTE.

Friday, August 5, 1842.

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*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*  
CICERO.

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### SUPPRESSION OF QUACKERY.

QUACKERY and medicine seem to be the constant companions, and yet the sworn enemies of one another:—their origin and advance have been nearly simultaneous; and wherever medicine takes the character of a science, and is made the means of obtaining a livelihood by its cultivators, quackery is ready to run the gauntlet with it, by acting on the prejudices and credulity of the public, as well as by the professions of certain cure which it uniformly makes. Its success, which is unfortunately too evident, appears to be owing to this, that it sticks at nothing—it does not deal in doubts or hesitations, but promises a speedy and sure removal of every ailment; it possesses, too, something of the marvellous, and has a sort of charm wrapped up in the mystery which attends it, leading to a species of fatuity which induces persons not otherwise rash or credulous to put confidence in secret remedies, and to hazard their lives in the hands of ignorant pretenders. Whatever be the reason, the fact is no less true, that thousands, and they not only of the lower classes (at whose blindness less wonder might have been excited), but also of the middle and upper ranks of society, are under the influence of this magic spell, and dose themselves with Morison's pills, or Johnson's elixir, more confidently than they would take the medicine prescribed by a scientific practitioner. Never, perhaps, was charlatanism prac-

tised with greater effrontery, and in a more dangerous manner, than at the present period, when a spirit of speculation pervades all ranks of society, and affects even the liberal professions.

Neither is there any thing peculiar in the disposition of our own countrymen, by which they become subject to these impositions in a greater degree than other nations. It seems to be a weakness innate in the human mind, which renders all liable alike to give way to them. France has always offered a fine field to quacks, and the it is now greatly under their pernicious influence is shown by a memoir lately addressed to the Académie Royale, on the subject, by M. Rayer Collard, in which he alludes to the general prevalence of charlatanism, and calls the attention of the members of the Academy to the necessity of lending their aid in the endeavour to suppress it, instead of leaving it in the hands of government, whose measures are generally tardy and often ineffectual.

After alluding to the different laws which have been put in force by government, with the intention of checking quackery, and pointing out their inadequacy to fulfil their object, as well as the projected plans which have been from time to time adjourned, till all expectation is lost of being benefited by the administration, or of obtaining any thing better than the code which now regulates the practice of medicine and pharmacy, M. Collard observes that we declaim with more or less eloquence against the encroachments of charlatanism—we find fault with the inactivity of the government which tolerates it, and the laws which give impunity to its agents; but what assistance do we render to check this evil, which involves the honour of the profession with the interests of society? nay, further, are we ourselves always irreproachable? Look over the columns

of our daily journals, and see the letters and prospectuses, delivered by thousands, from one end of France to the other, not unfrequently bearing certificates and testimonials delivered by physicians of the first reputation, whose high character is employed to assist in duping the public. Where, in short, do we not find charlatanism concealed under some form or other? sometimes wearing the veil of science, at others affecting a rude austerity; in the profession, in the concours, and sometimes even finding its way into the academies. And the men who have rendered themselves voluntary or involuntary accomplices in these manœuvres, come among us, and deplore, with abundance of philanthropy, the evils of quackery and the bad effects of their own industry.

He then urges them, instead of sitting tamely by, and calling others to their assistance—instead of waiting for the long promised but never forthcoming legislation—to arouse themselves, to make the best use of their present laws, and to take some active measures for protecting the dignity of the profession and the health of the public, or at any rate to find some weapons of defence. It is true, he says, that delicacy of feeling, and the dread of appearing to be swayed by personal motives, may deter an individual from attempting to punish the offender; but, what one person cannot do, a body of honourable men can effect without scruple or the risk of suspicion. He particularly refers to the number of individuals who are parading about their medicaments, their cosmetics, and instruments, under the pretended sanction of the Academy: such charlatans, not only violating the laws and injuring the profession, but also associating the society in their proceedings, are, nevertheless, allowed to go on unmolested, and to continue the sale of their drugs without any attempt being made to

protect the profession from their usurpations. M. Collard represents it to be the duty of the members of the Royal Academy to resist such abuse, and proposes that, as it is the first medical society in the realm, composed of physicians, pharmacutists, &c. chosen from among the most eminent, and become, as it were, the depository of the double interests of the profession and science, a commission should be formed in it, whose duty it shall be to inquire into questions of this sort, and report their decisions to the united body.

It is not our purpose to inquire into the justice of this proposition, or to enter upon the question whether it be right to alter the constitution of the Académie de Médecine, so as to make it co-operate directly in the suppression of abuses which arise in the practice of the art, or whether such a project would be consistent with the spirit and letter of an institution which professes to be exclusively and essentially of a scientific nature. We do not allude to the proposal for the purpose of arguing its merits or applicability, but merely because it refers to a subject of such paramount importance to all who are engaged in the practice of medicine, because it shows the present condition of the profession with regard to it in France; and by giving us an insight into the condition of matters there, it may assist us in coming to some determination as to what course may best be pursued in our own country.

There is much justice in some of the observations which we have quoted from the memoir of M. Collard. It does indeed seem contradictory and absurd, that so much should be said in the profession against quackery, and so many appeals made to government for its suppression, while the very medicines which are thus denounced as injurious bear the signatures of medical men in testimony to their utility, and are palmed upon

the public under their authority, real or assumed. We grant that this may not be carried to the extent it is in France, and that our learned societies are not so often made subservient to charlatans in this way. Nevertheless, we have too frequent opportunities of reading the advertisements of secret medicines which are recommended by a long train of signatures from medical men. Some of these, doubtless, are fictitious; but, even in this case, is it not incumbent on the person, who is thus made the unwilling advocate of quackery, to take some means of exposing the effrontery of the parties, of removing the calumny which is thrown upon his own character, and of preventing his name from any longer remaining a scandal to the profession? It is to be feared, however, that many persons are induced, from a thoughtlessness of the evil they are committing, from a desire to serve certain parties, or from some other motives, to lend their names in this mischievous service. If the members of the profession would reflect seriously upon the unfavourable effect such conduct has—if they would remember that, by attaching their signatures to the prospectuses of secret medicines, they are openly lending their aid, and giving their sanction, to quackery in its worst and most dangerous form; we feel assured these exhibitions would be of far less common occurrence. In fact, no one who has at heart the real welfare of the profession could render himself so subservient to the destruction of its interests as to attest the efficacy of any secret medicines.

It may, perhaps, be urged, too, with some truth, that the profession has always shewn a great unwillingness to act individually or collectively in the suppression of quackery. We are loud enough in our complaints against it, but not sufficiently active in taking

direct measures to check the abuse. What is every body's business has in this, as in most other matters, been performed by nobody; and, unless the members of the profession will rouse themselves to exertion, we cannot expect to make head against the evil. It is useless, like the husbandman in the fable, to cry out for assistance, unless we put our own shoulders to the wheel, and endeavour to extricate ourselves from the difficulty.

But the cause of this inactivity on the part of medical men is unquestionably owing to the ill support which our laws afford them. In the present state of things men may, in their audacity and ignorance, tamper with life, and subject their victims to sufferings, or in some cases even be the direct cause of their death, and yet it is almost useless to commence any legal proceedings against them. Such is the constitution of the laws, that persons are allowed to go on with their work of destruction without interference. Unless the instance of their cruelty be too gross to escape attention, no attempt is made to punish them, and the public are left, in great measure, to the mercy of any illiterate quack who chooses to make a profit of their sufferings, and reap the advantage of the pain he inflicts upon them.

This is a fact in which every town, and every village in the kingdom, has its experience; each has one or more quacks who gain their livelihood by the misery they bring upon their fellows, and yet retain so much influence over them as to possess their gratitude and favour, or even to be regarded with a sort of veneration. They make no secret of their proceedings, but carry on openly, and for years together, a quack practice, sometimes making their regular visits, and charging for their drugs like regular practitioners. They who act in this manner, are sometimes so illiterate



as to be able neither to read nor write;—nay, sometimes they act upon the superstition of the public, and pretend to have received an express call in their vocation, and attribute their medical knowledge to a special gift of Providence, over-ruling the necessity of all worldly skill and study.

Why a little more protection should not be given to the public and the profession against the usurpation and cruelties of those ignorant pretenders, we cannot see. To suppress quackery entirely, in a country of free trade, like our own, we grant to be impossible; but this is no reason why the legislature should refuse to interfere at all, and endeavour, by active measures, to check the evil. Some good, surely, might be done by careful attention to the subject. At any rate we cannot agree in the propriety of giving them a still wider range, as was proposed in the bill of Sir James Graham, by merely *discountenancing* illegal practice. We want some more active legislation against them; we daily witness the ill effects of the prevalence of quackery under the mildness of the existing laws, and with this experience, it surely would not be very wise to render those laws less binding, and to expose the public still more to the tender mercies of every ignorant pretender who should choose to assert a knowledge of medicine.

## UNIVERSITY OF LONDON.

### BACHELOR OF MEDICINE.—FIRST EXAMINATION, 1842.

Aug. 1.—Morning, 10 to 1.

#### *Anatomy and Physiology.*

Examiners, Mr. KIERNAN & Prof. SHARPEY.

1. Describe that portion of the basis of the cranium which is bounded anteriorly by the suture uniting the horizontal plates of the superior maxillary and palate bones, and by the anterior margins of the pterygoid processes, posteriorly by the superior transverse ridge of the occipital bone, and laterally by the ridges separating the zygomatic

from the temporal fossæ, and by the posterior roots of the zygomatic processes of the temporal bones. Commence the description at the anterior part; mention the openings, with the parts occupying them, in the order in which they are seen, and the attachments of the muscles and ligaments.

2. Describe the inferior maxillary bone, its mode of ossification, and the changes which it undergoes at different periods of life. Describe also the articulation of the lower jaw and its movements, mentioning the muscles by which they are severally effected.

3. Give the anatomy of the eyelids, and of the lacrymal apparatus, comprehending the lacrymal gland and its ducts, the puncta lacrymalia, lacrymal sac and canal.

4. The viscera of the abdomen having been removed, describe the muscles, vessels, and nerves, seen on the posterior wall of that cavity. Describe the lumbar plexus of nerves, and the course of its branches within the limits of the lumbar and iliac regions. Describe also the parts relating to femoral hernia which occupy the space included between Poupart's ligament and the margin of the pelvis, as far as they can be seen from within.

5. Give an account of the form and structure of serous membranes in general, the nature of their secretion, and the purposes which they serve.

Afternoon, 3 to 6.

1. Describe the articulating surfaces of the astragalus, and the surfaces with which they are articulated. What motions take place in the several joints into the formation of which this bone enters, and to what classes of joints do they respectively belong? Enumerate the muscles of the leg and foot, 1st, in the order in which they are met with in dissection; 2d, classifying them according to their actions; and mention the insertions of the muscles which extend the foot.

2. State the dissection required to expose the course of the deep cervical artery on the posterior aspect of the vertebræ; commencing with the integuments on the back of the neck, and describing the different parts exposed in the dissection.

3. Describe the form, structure, and situation of the submaxillary and sublingual glands, stating the steps of the dissection required to display them *in situ*, and describing the parts immediately contiguous to them.

4. The upper and the posterior parts of the cerebrum, the corpus callosum, with the fornix and velum, being removed, and the fourth ventricle being laid open by an incision through the middle of the cerebellum, describe the parts brought into view, commencing the description anteriorly.

5. Give the anatomy of the auricles of the heart; comprehending their situation and connections, their external and internal configuration, and the structure of their parietes. What is the usual weight of the heart in the adult, and how does it differ according to age and sex?

Aug. 2.—Morning, 10 to 1.

### Chemistry.

Examiner, Professor DANIELL.

1. A solution of a salt is contained in a bottle marked A, placed before you with appropriate tests; of what acid and base is it composed? what are their equivalent numbers upon the hydrogen scale? and what is the nature of the changes produced by the tests?

2. A solution of another salt, marked B, is also placed before you with appropriate tests; what is the acid of the salt, what its probable base, its equivalent number, and the nature of the changes produced by the tests?

3. What is meant by the atomic theory? State its leading doctrines, and explain them by examples.

4. How may the chemical equivalent of a substance be determined?

5. What advantage is there in stating the proportions of the ingredients of compound bodies in equivalents, over a statement of the same proportions per cent.?

6. What do the following symbols represent:— $\text{SO}_3$ ,  $\text{NH}_3$ ,  $\text{HO} = \text{SO}_4$ ,  $\text{NH}_4$ ? and what is the theory to which the equation refers?

7. What general principle do we avail ourselves of for the measurement of temperature, and how is it applied?

8. Describe the construction, and explain the action, of the electrophorus.

9. What are the forces which may be developed by a voltaic current? Briefly exemplify each when called into action.

Aug. 2.—Afternoon, 3 to 6.

### Materia Medica and Pharmacy.

Examiner, Dr. PEREIRA.

1. Describe the mode of preparing Tartaric Acid according to the London Pharmacopœia. Explain the chemical changes which occur in the process. State the atomic constitution of the acid in both the dry and crystallized states. Give the tests by which the acid may be distinguished from other vegetable acids, and by which the absence of the Bitartrate of Potash in its powder may be ascertained. Lastly, state what are the quantities of Carbonate of Potash (the granulated salt of the shops), Bicarbonate of Potash (crystallized), Carbopate of Soda (crystallized), *Sodæ sesquicarbonas* Ph. Lond., and *Ammonia ses-*

*quicarbonas* Ph. Lond., which are respectively required to saturate one scruple of the crystallized acid.

2. You are requested to give a botanical description of *Hyoscyamus niger*; describing successively the root, stem, leaves, flowers, fruit, and seeds; stating its duration, and its position in both the Sexual System of Linnæus and the Natural System of De Candolle. Mention the principal symptoms which characterize its operation on the system in both medicinal and poisonous doses. State in what cases its use is preferable to that of opium, and in what doses you would administer the Tincture and Extract.

3. Briefly state the circumstances which favour the view that the absorption of a medicine is necessary to the production of its remote effects.

4. In what cases are Ferruginous Tonics to be preferred to the Bitter Vegetable Tonics?

5. What is the specific gravity of *Spiritus rectificatus*, Ph. Lond., and of *Spiritus tenuior*? What are the relative proportions, by volume, of rectified spirit and water which are required to constitute proof spirit? By what test is the presence of Oil of Corn Spirit in Rectified Spirit to be detected?

6. What quantities of the following preparations contain respectively one grain of Opium? *Confectio Opii*, *Pilulae Saponis Compositæ*, *Pulvis Cretæ compositus cum Opio*, *Tinctura Opii*, *Tinctura Camphoræ composita*, and *Pulvis Ipecacuanhæ composita*.

### Botany.

Examiner, Prof. HENSLOW.

1. Distinguish between prickles, thorns, and bristles.

2. Explain the structure of a cremocarpium.

3. Compare the principal structural differences in the flowers and fruit of clematis, anemone, ranunculus, helleborus, and pæonia, upon which five subordinate groups or tribes of ranunculaceæ depend.

4. What is the chief characteristic difference in the structure of the flowers of plants grouped under the tribes Alsineæ and Sileneæ?

5. How are the leaves disposed in Chenopodiaceæ, and have they stipules or not?

6. How is the origin of the vesicles of the cellular tissue explained?

7. Explain the general process of fertilization, and describe its peculiar modifications in Orchidaceæ. Describe the specimens marked,

8. }  
9. }  
10. }

MEDICINAL PLANTS.

LIST OF PLANTS WHICH OUGHT TO BE  
COLLECTED IN AUGUST.

RANUNCULACEÆ.—*Clematis vitalba*. Com-  
mon Traveller's Joy.

*Ranunculus flammula*, Lesser Spearwort  
Crowfoot, and *Ranunculus sceleratus*, Water  
Crowfoot.

UMBELLIFERÆ.—*Eryngium campestre*.  
Field Eryngo.

*Archangelica officinalis*. Official An-  
gelica.

*Pencedanum officinale*. Hog's Fennel.

*Conium maculatum*. Common Hemlock.

BERBERACEÆ.—*Berberis vulgaris*. Com-  
mon Barberry,

CUCURBITACEÆ.—*Bryonia dioica*. Red-  
berried Bryony.

*Momordica elaterium*. Squirting Cucum-  
ber.

LINACEÆ.—*Linum catharticum*. Purg-  
ing Flax.

MALVACEÆ.—*Malva sylvestris*. Com-  
mon Mallow.

*Althæa officinalis*. Marsh Mallow.

LYTHRACEÆ.—*Lythrum salicaria*.  
Spiked purple Loosetrife.

RHAMNACEÆ.—*Rhamnus catharticus*.  
Buckthorn.

EUPHORBACEÆ.—*Euphorbia lathyris*.  
Caper Spurge.

RUTACEÆ.—*Ruta graveolens*. Common  
Rue.

ROSACEÆ.—*Potentilla tormentilla*. Tor-  
mentil.

*SPIRÆA ulmaria*. Meadow-sweet.

*ROSA canina*. Dog-rose

*GENISTA tinctoria*. Wood Waxen.

URTICACEÆ.—*Humulus Lupulus*. The  
Hop.

CHENOPODIACEÆ.—*Chenopodium oli-  
dum*. Stinking Goosefoot.

ATRIPLX *angustifolia*. Oak-leaved  
Goosefoot.

ERICACEÆ.—*Arbutus Uva Ursi*. Red  
Bearberry.

AQUIFOLIACEÆ.—*Ilex Aquifolium*. Com-  
mon Holly.

ASTERACEÆ.—*Inula helenium*. Elecam-  
pane.

*Anthemis nobilis*. Common Chamomile.

*Ptarmica vulgaris*. Sneeze Wort Yarrow.

*Artemisia absinthium*. Common Worm-  
wood.

*Tanacetum vulgare*. Common Tansy.

CYNARACEÆ.—*Arctium lappa*. Bur-  
dock.

CICHORACEÆ.—*Lactuca virosa*. Strong-  
scented Lettuce.

*Cichorium intybus*. Wild Succory.

SOLANACEÆ.—*Hyoscyamus niger*, *Da-  
tura stramonium*, *Atropa belladonna*.

*Solanum dulcamara*. Bitter Sweet.

GENTIANACEÆ.—*Erythræa centaurium*.  
*Menyanthes trifoliata*. Buckbean.

MELANTHACEÆ.—*Colchicum autumnale*.  
—Condensed from *Pharmaceutical Journal*.

PREPARATION OF  
CYANIDE OF POTASSIUM.

BY M. LIEBIG.

ONE of the best methods of preparing the  
cyanide of potassium, consists, as is known,  
in the decomposition of the ferro-cyanide of  
potassium at a red heat; but several objec-  
tions attach to this process, one of which is  
that a loss takes place of a third of the cy-  
anogen contained in the salt employed. This  
salt, formed of two atoms of cyanide of  
potassium, and one atom of cyanide of iron,  
undergoes no change from a red heat in the  
first member of the combination; but the  
second is decomposed into carburet of iron,  
with disengagement of nitrogen. The car-  
buret of iron which is formed, absorbs the  
fused cyanide of potassium like a sponge,  
and we are obliged to have recourse to sol-  
vents, and alcohol in particular, to obtain  
the resulting cyanide of potassium without  
iron and without loss.

But as cyanide of potassium possesses  
properties which are found to be extremely  
valuable in effecting reduction and separation  
in chemical analyses, I have endeavoured to  
simplify its preparation.

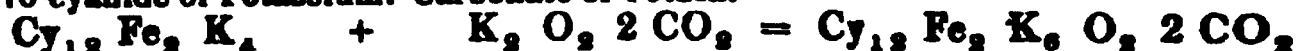
If eight parts of ferro-cyanide of potas-  
sium be well dried, by a slight calcination,  
on a hot iron plate; if this be afterwards  
well mixed, in fine powder, with three parts  
of dry carbonate of potash, and the mixture  
thrown at once into a Hessian crucible, pre-  
viously raised to a dull red heat, and this  
temperature maintained, the mixture will  
first melt into a brown magma, with rapid  
disengagement of gas; in a few minutes  
afterwards, when the fluid mass has been  
heated to redness, the dark colour will be  
seen to become brighter, and by continuing  
the fusion the contents of the crucible will  
become of a clear amber yellow. If a warm  
glass rod be introduced from time to time,  
the portion which adheres to it, when with-  
drawn and allowed to solidify, will at first  
be of a brown colour; it will afterwards be-  
come yellow; and, lastly, at the end of the  
operation, the liquid which adheres to the  
glass rod will be clear and colourless like  
water, and will set into a crystalline mass of  
a brilliant white.

During the fusion, there will be seen  
floating in the fluid mass some brown flakes,  
which ultimately unite in the form of a  
sponge, and assume a clear-grey colour. If  
the crucible be now taken from the fire, and

allowed slightly to cool, it generally happens that this grey powder settles entirely to the bottom; the deposition may be facilitated by agitating it once or twice with the glass rod. The hot and melted mass which swims on the surface may now be easily decanted into a warm porcelain capsule, without the least portion of the powder, which has settled to the bottom, passing with it.

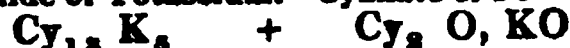
The mass, thus separated from the iron by decantation, will contain two combinations. It will principally consist of cyanide of potassium; the other combination will be cyanate of potash. These two will be found in the proportion of five atoms of cyanide of potassium to one of cyanate of potash.

Ferro-cyanide of Potassium. Carbonate of Potash.



And after the fusion we shall have—

Cyanide of Potassium. Cyanate of Potash.



Iron.  
 $\text{Fe}_2$

Carbonic Acid.  
 $2 \text{CO}_2$

We obtain from two atoms of ferro-cyanide of potassium, five atoms of cyanide of potassium; consequently one-fourth more than by the fusion of that salt alone at a red heat. The cyanate of potash, with which it will be mixed, will not interfere with any of its uses; its presence will be easily detected by saturating the cyanide of potassium with an acid: it will give rise, in fact, to an effervescence caused by the disengagement of carbonic acid, and there will be found in the solution an ammoniacal salt.

The explanation of the formation of cyanide of potassium under the conditions indicated is not quite clear, because the carbonate of protoxide of iron which is formed, is decomposed before the reduction of the iron and separation of carbonic acid into

The following changes take place during the fusion of ferro-cyanide of potassium with carbonate of potash:—

In the commencement of the fusion, the cyanide of iron of the ferro-cyanide of potassium is decomposed with the potash of the carbonate of potash into cyanide of potassium and carbonate of protoxide of iron, from which latter the cyanide of potassium, at a higher temperature, takes the whole of the oxygen. In consequence of this reduction there will be obtained cyanate of potash and pure metallic iron.

If we suppose the mixture to contain two atoms of ferro-cyanide of potassium, and two atoms of carbonate of potash, it will be represented by the following formula:—

carbonic oxide and ferroso-ferric oxide; and it is at the expense of these that an indeterminate quantity (at the most that which is indicated in the preceding formula) of cyanate of potash is formed.

The remaining metallic iron, as well as the sides of the crucible, are covered with cyanide of potassium: the best way to recover this, is to dissolve it in hot water, and to heat the solution with a small quantity of sulphuret of iron, which will readily dissolve. The cyanide of potassium may be obtained from this solution by evaporation, in the state of ferro-cyanide; sulphuret of potassium will remain in the mother-water. —*Annalen der Chemie und Pharmacie*, and *Pharmaceutical Journal*.

## M. VELPEAU ON CYSTS OF THE EYELID.

I WOULD say a few words respecting the case of a man, on whom I am about to operate for three small tumors on the eyelid. Of two of these the outline cannot be distinguished, being masked by the third which is more voluminous. This last is evidently a cyst filled with a fluid or semifluid material. The nature of the contents of the two others it is not easy to diagnose, from their size and the thickness of their walls, but from analogy we may suppose them to be filled with a liquid or semiconcrete matter.

Tumors of this description are very rarely cured by any plan of treatment, except by operation. Occasionally, indeed, they disappear without any operation or treatment. Sometimes this may result from the particular constitution of the individual, as in a young subject who about the age of puberty

was freed from an affection of this nature. Or, it may be produced by some other disease occurring at the same time, as in the case of a woman who had three of these tumors on the eyelid, and on whom I had fixed a period for the operation. But she came to me some months afterwards, and informed me that she had suffered under an affection of the chest, and the tumors had disappeared. Occasionally they disappear under local applications for their resolution, but we can rarely expect success to attend this treatment, and it is altogether ineffectual when they have attained a considerable development. They may, however, be safely and with certainty cured by surgical means.

Of the two proceedings, extirpation and incision, the former, employed by most surgeons, appears to me a tedious operation. It is necessary to dissect with caution, and if it be a cyst, whatever care is taken it will be difficult to avoid opening it; it then is necessary to excise it entirely, and to apply

canterization, or there will be a considerable chance of return. If the contents of the tumor be concrete, the operation is comparatively easy; but, otherwise, I think incision is preferable: it is less painful, and quite as successful. Some persons in practising this operation hold the tumor with the fingers, others place an elevator beneath the eyelid. I employ simply two pair of forceps, of which one is held by an assistant; I myself, holding the other in such a manner that the eyelid is rendered tense between them, and raised from the globe of the eye. I make the incision, expel the contents, and apply nitrate of silver to the interior of the cavity. There is sometimes slight consecutive inflammation, and the eyelid swells a little, and soon an eschar is detached, and the cure accomplished in eight days. A piece of lint dipped in saturnine lotion or cold water is the only dressing employed. I should, however, observe, that by extirpation the cure is more prompt; a piece of dressing is placed on the wound, and the whole is terminated.

After these observations the operation was performed: M. Velpeau incised the different tumors, and canterized the bottom of each wound.—*Clinical Lecture by M. Velpeau, in Gazette des Hôpitaux.*

#### ENLARGED PROSTATE MISTAKEN FOR CALCULUS.

M. RIPAULT, of Dijon, was called to assist at an operation for stone. The patient was an adult, in whom all the usual symptoms of calculus were present: the characteristic sound occasioned by striking the sound against a hard body was distinctly heard by several persons, and the existence of a stone undoubted. The lateral operation was performed, the bladder was opened; but the forceps, several times introduced, brought away nothing but clots of blood. An encysted stone was suspected, but the operation was discontinued. Nevertheless, the pains, which the patient previously experienced, ceased for some months; after which they recurred with greater violence; difficulty of micturition increased, the urine became ammoniacal, fever set in, and the patient died six months after the operation. On examination of the body, the pustules were found enlarged and composed of tough fibrous tissue, a section of which had a horny appearance, and when struck with the sound it communicated the same sensation which had been experienced during life.—*Académie des Sciences; Gazette Médicale.*

#### THE TERMINATION OF NERVES.

M. MANDL agrees with Valentin, Burdach, &c. with regard to the general termination of nerves in loops, but his attention has principally been directed to discover in what manner parts, during their growth, acquire nervous fibres. For, at whatever age or size an animal be examined, the nerves are always found terminating in loops. The results of his observations are—that in young animals the bundles of nerves are destitute of neurilemma; and when a new tissue is formed, it commences by the production of some corpuscles between the primitive fibres composing a bundle of nerves, in consequence of which, one or two elementary fibres are, by the new production, separated from the rest of the bundle. In proportion as these corpuscles undergo their development, and new ones are formed, the primitive fibres, which were at first but little separated from the direction of the bundle, become more and more divided, and form a true loop (the new parenchyma is not, however, formed solely between the primitive fibres). It appears that the primitive fibres exist in the same numbers in young animals as in the adults, the division of one into two not having been in any instance traceable. In the same memoir M. Mandl adds some remarks on the structure of the retina, which he says is divisible into two layers—the internal, in contact with the vitreous humor, is composed of the same elements as the cortical substance of the brain. The external portion contains, besides the blood-vessels and the expansion of the optic nerve, peculiar bodies which the author describes under the name of *baguettes*. They form the most external layer, being placed obliquely. In birds they measure  $\frac{1}{100}$  to  $\frac{1}{80}$  millimetre in length,  $\frac{1}{100}$  millimetre in width, and having on their outer extremity an oil-globule of a more or less deep yellow or red colour, whilst they terminate internally in a very fine thin thread. No relation can be traced between these *baguettes* and the optic nerve. The eyes must be examined fresh, and the retina in the liquid of the vitreous humor; any other fluid destroying its structure.—*Académie des Sciences; Gazette Médicale.*

#### THE EMPLOYMENT OF STRYCHNIA IN AMAUROSIS.

A LABOURING boy, 12 years old, received a blow in the right supra-orbital region, by the falling of a pewter vessel which he was endeavouring to remove from a high shelf. At the moment of receiving the blow he perceived a flash of light in the eye, but



could see nothing with it afterwards. In three hours he came under the care of Dr. Dusterberg, of Lippstadt. Immediately above the right eyelid was visible a small blue spot, of the size of a horse-bean. In the eyeball itself nothing abnormal could be detected; no trace of opacity or extravasation of blood. The pupil acted naturally, as in the sound organ, but the power of vision was entirely lost in the right eye; so that he was unconscious when it was directed towards the full glare of the sun. He was treated for two months with bleeding, cold applications, mercurial frictions, blisters, drastics, emetics, electricity, and even the frontal nerve was divided; but all in vain: the amaurosis did not in any degree yield. Subsequently a solution of a grain of nitrate of strychnia in half an ounce of rectified spirit of wine was dropped into the eye four or five times daily: the result of which was, that, in fourteen days, sensations of light were experienced in the affected eye, which, under the continued use of the remedy, increased so that he was enabled to distinguish coloured objects. After a period of three months, the power of vision had so far returned that he could recognise bodies at a distance of three feet. At this point the improvement stopped, notwithstanding that the dose of the strychnia was increased, and its endermic application had recourse to. The case, however, may fairly be adduced to show the beneficial influence of strychnia on torpid amaurosis.—*Schmidt's Jahrbücher*.

### PECULIAR MATTER SECRETED ON THE SURFACE OF THE HANDS

OF A

Gouty Person, after severe attacks of Gout.

By DR. PETIT.

THE patient who furnished this secretion was 56 years old, of a strong constitution, and addicted to good living. He had been subject to gout ever since his 24th year, and during the attacks of gout his urine frequently deposited a red sediment. After severe attacks he had observed a tenacious white matter form on his hands. Four grains and a half of this substance, examined under the microscope, presented a number of transparent crystals. By chemical analysis it was ascertained to be composed of albumen in large quantity—about four-fifths, of lactic and phosphoric acid, chloride of soda and phosphate of lime, and evident traces of urate of soda.—*Journal de Pharmacie*; and *Brit. and For. Med. Rev.*

### ON GILDING OF SURGICAL INSTRUMENTS.

THE electrotpe has been applied to this purpose in Paris. A letter from M. Charrière was read at the Institute on the 21st of March, in which he says, "Having gilded by M. de Rustz's process a considerable number of surgical instruments and pieces of cutlery, I have submitted them to experiments which seem to me to merit attention. The cutting instruments, which I have repeatedly tested on the dead body, have suffered no damage either in the quality of their edge or in their gilding; and the instruments for pressing have preserved all their power of resistance. I have moreover obtained a positive proof that the instruments thus gilded are not subject to rust; and this is an advantage of which the importance may be easily understood, especially for instruments which are intended to remain for some time in the body. I may add that the silver and the platinum plating, applied in the same manner, afford the same results as the gilding."—*Gaz. des Hôp.*; and *Brit. and For. Med. Rev.*

### A JOURNEY TO GRAEFENBERG

AND

OBSERVATIONS ON THE ESTABLISHMENT.

By J. GROSS\*.

NOTWITHSTANDING the hardness of my bed, I slept profoundly until 4 A.M., when my host came to pack me up to commence my first sudorific process. He made me get up, took away the sheet and a wadded counterpane which Priessnitz had lent me, (as I was not accustomed to the hot feather-bed which they use here), and instead of these he spread out a large blanket, on which I laid down naked; he then commenced the usual operation of packing up. Custom had given mine host such facility that he wrapped me up so well and so firmly, that I could not move. Over the blanket he put the feather-bed, and then the wadded counterpane, and over all my cloak; these being well tucked in, he finished by burying my head so deep in the pillows, as only to leave the eyes, nose, and mouth, uncovered. This covering up of the head is only used when required by the invalid, or by the order of Priessnitz. On leaving me my attendant wished that perspiration might quickly commence, and he came every now and then to inquire how I was going on.

\* Hydropathy, or the Cold Water Cure, as practised by Vincent Priessnitz, &c.

This manner of lying without being able to move, in a woollen blanket, of which the hair is long, causes an uncomfortable sensation on the skin, and was to me a most disagreeable operation; but this was only so for the first time. I went to sleep soon after I was covered up, although it is said this is not good. My temperament being more dry than moist, it was necessary to remain two hours in this position, until the sweat was produced by the concentration of perspiration, and the cutaneous heat manifested itself: with many it requires less time, but this is regulated according to the disposition of the patient. My landlord, seeing I was in a state of perspiration, opened the window, and gave me from time to time cold water to drink. Both are done in order to refresh the lungs, by causing them to inhale fresh air, to reanimate the strength of the body, and to preserve it from the heat and weakness which ensue. Cold water, drank when the perspiration is running, gives activity to the respiratory functions, whilst if drank before the breaking out of perspiration, it stops it. Another means of promoting perspiration, when difficult, is the forced motion of the body, and rubbing of the hands and feet together, as well as this can be done when so tightly wrapped up; only care should be taken not to drink after such motion. After having perspired two hours, and consequently passed four hours in this disagreeable situation, I was delivered from it by Priessnitz, who came in and judged it to be sufficient. We must always leave him to decide the length of the time requisite, and avoid prolonging it until weakness is felt. Its duration varies from half an hour to two hours from the moment perspiration commences. My attendant shut the window, freed my head, and quickly took off all my coverings except the blanket, which he sufficiently loosened to enable him to take away the urinal which had been placed in the bed, and to encase my feet in straw slippers.

At the same time Priessnitz caused me to be seated, and to hold out my hands, which he wetted several times with cold water; when he gave me the basin telling me to wash my face. I then left the bed, wrapped in my blanket covered with perspiration. I went with a quick and gay step, without experiencing the slightest weakness or inconvenience, to the bottom of the staircase, and outside the house to the bath room. Priessnitz preceded me; my landlord followed, carrying the sheet and cloak. After having washed my hands and face, and thrown off the blanket, Priessnitz made me enter the preparatory bath of tepid water, caused me to be washed and well rubbed as on the day previous; I then plunged for an

instant into a bath filled with cold water, which is continually fresh on the one side, and empties itself on the other, and returned as quick as possible to the former, when, after another good rubbing, I was obliged again to go into the cold bath, there to plunge several times, always rubbing my limbs; and again returned for the last time into the tepid bath, which I soon left covered as the preceding day to regain my room, where I was dried by rubbing: I then quickly dressed, and went out to take exercise. Far from shivering, I felt a delightful heat, and a peculiar vigour of body and mind.

I was subjected to the operation of perspiring, but of shorter duration, accompanied by the same bath again in the evening; but the next day, leaving the preparatory bath, on coming out of bed I plunged into the cold bath, taking the precaution, which should never be neglected, of washing hands, face, and neck, previously.—*Edinb. Med and Surg. Journ.*

## ANATOMICAL PLATES.

*To the Editor of the Medical Gazette.*

SIR,

I, in common with many medical students and practitioners, feel the want of a set of anatomical plates which are sufficiently clear in their details, without being got up in an expensive style. The price of anatomical plates that are of sufficient size and scale to be of much use, is such as to place them beyond reach of many who need them, either in assisting them in prosecuting their first studies, or in refreshing past studies. The beautiful cuts of Bagg, on a larger scale, might come within, I should think, £1. 1s. or £1. 10s., or if £2. 2s.—if a set of fair plates could be procured at such moderate price—I have no doubt that the sale of them would be very extensive.

If you will allow this hint to publishers to appear in your valuable journal, you will greatly oblige

Yours respectfully,

A CONSTANT READER.

London, July 21, 1842.

## PIERCING STRICTURES.

*To the Editor of the Medical Gazette.*

SIR,

HAVING read in your journal a letter signed "Chirurgus," wherein my name is mentioned relative to "piercing strictures," I beg to say that I should have answered him at full length if he had not been ashamed to sign

his own name. As it is, I have only to assure the profession at large that, when I invented my instruments, I had never heard of M. Amussat's plan of treatment; nor do I know it now; neither have I read, not being a *mere bookworm*, any published account of such as mine. I scarcely can suppose that Chirurgus can be so *unenglish* as to wish to detract from the merit of his own countryman, or attack an individual whose only motives have been to promote the public good and the welfare of his profession.

The unbiassed testimony of Mr. Coulson and others, and the numerous facts which I have published in my work and elsewhere, are a sufficient answer to the unsupported opinion of an anonymous writer.

I have the honour to be, sir,

Your obedient servant,

R. A. STAFFORD.

28, Old Burlington Street,  
July 30th, 1842.

### PROFESSORSHIP OF SURGERY.

THE vacancy in the Edinburgh Chair of Surgery, vacant by the lamented death of Sir Charles Bell, has been supplied by the appointment of Mr. Miller, Lecturer on Surgery in Edinburgh, and one of the Surgeons to the Infirmary.

### DEATH OF BARON LARREY.

FRENCH surgery has just been deprived of one of its brightest ornaments, by the decease of Baron Larrey, which took place at Lyons on the 29th ult., about the same hour that his wife, the Baroness, died at Paris. He was on his return from Algeria, after making an inspection of the French troops in that colony. The body is to be removed to Paris under the care of his son M. Hippolyte Larrey, who accompanied him into Africa.

### ROYAL COLLEGE OF SURGEONS.

#### LIST OF GENTLEMEN ADMITTED MEMBERS.

*Friday, July 22, 1842.*

J. Winship.—W. Langston.—F. Spicer.—W. M'Neece.—W. Jackson.—A. Hingston.—C. W. H. Howell.—H. H. Parrott.—W. T. Boddy.

*Monday, July 25, 1842.*

R. G. Woolnough.—J. J. Tweed.—W. R. M. Griffin.—W. Ettringham.—R. Hood.—D. T. Lewis.—W. Wood.

*Friday, July 29, 1842.*

H. P. Freeman.—B. Clarke.—W. Folwell.—R. George.—F. J. Robinson.—H. B. Evans.—T. Boycott.—A. Lacey.—H. N. Macpherson.

*Monday, August 1, 1842.*

C. H. Moore.—W. N. Spong.—E. Griffith.—H. E. Norris.—J. Morley.—W. H. Pettigrew.—H. Neville.—E. Miller.—W. T. Billings.—J. A. J. Martin.

### APOTHECARIES' HALL.

#### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, July 28, 1842.*

R. Stewart, London.—J. H. Gray, Manchester.—John Gregory, Sunderland.—N. J. Watson, Burnopfield.—G. J. Seale, Portsmouth.—J. Prima, Wiveliscombe.—H. B. Curtis, Paulton, Somerset.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from causes registered in the week ending Saturday, July 23, 1842.

Small Pox .....	2
Measles .....	27
Scarlatina .....	25
Hooping Cough .....	9
Croup .....	7
Thrush .....	7
Diarrhoea .....	12
Dysentery .....	5
Cholera .....	2
Influenza .....	2
Typhus .....	13
Erysipelas .....	3
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	165
Diseases of the Lungs and other Organs of Respiration .....	213
Diseases of the Heart and Blood-vessels ....	13
Diseases of the Stomach, Liver, and other Organs of Digestion .....	80
Diseases of the Kidneys, &c. ....	4
Childbed .....	7
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	3
Diseases of Joints, &c. ....	1
Ulcer .....	1
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	70
Old Age or Natural Decay .....	43
Deaths by Violence, Privation, or Intemperance .....	19
Causes not specified .....	2
Deaths from all Causes .....	746

### METEOROLOGICAL JOURNAL.

July.	THERMOMETER.		BAROMETER.	
Wednesday 27	from 49 to 64		30.13 to 30.10	
Thursday . 28	54	70	30.04	29.90
Friday . . . 29	51	61	29.82	29.58
Saturday . 30	44	62	29.98	30.08
Sunday . . 31	50	65	30.06	30.15
<i>August.</i>				
Monday . . 1	48	67	30.21	30.23
Tuesday . . 2	45	70	30.14	30.00

Wind, N.E. on the morning and S. on the evening of the 27th; S.W. and N.W. on the 28th; N.E. and N. on the 29th; N. and N. by W. on the 30th and 31st ult.; N. and E. on the 1st, and S.E. on the 2d inst.

Cloudy, with frequent rain on the 27th; thunder and lightning in the evening of the 27th; and a violent storm on the morning of the 28th; the day generally clear and warm. The 29th rain in the morning, afternoon generally cloudy. The 30th and 31st ult. generally clear. The 1st and 2d inst. generally clear.

Rain fallen, .455 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, AUGUST 13, 1842.

## CLINICAL OBSERVATIONS ON DISEASES OF THE SKIN.

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

THE next *vesicular* disease to which I wish to direct your attention is Herpes; but as it is a disease whose duration is usually limited to a short space of time, and as any plan of treatment does not materially lessen that duration, it does not seem necessary to occupy much of your time with its consideration. The vesicles of herpes, of which you have an example before you, are better marked, more globular and distinct, and larger, than those of eczema; they are developed on a red and sometimes raised patch, where there is often a stinging and itching before there is any appearance of vesicles; when they appear, they are arranged in groups, such as you see before you in this specimen of herpes zoster: the form of the group may be circular, oval, or annular, the skin in the intervals between the groups, as in the case before us, being healthy. The eruption is usually acute, and its existence is circumscribed, and seldom extends beyond a month: it is true it may become chronic, though this is rare, or intermittent, which is still more rare. In most cases there is a succession of crops of vesicles, one appearing as the other is disappearing, whilst in eczema the development of vesicles is much more simultaneous. In its progress the fluid may be absorbed, the vesicle shrivelling, followed by a simple desquamation of the raised epidermis, and then its existence is short; or the vesicle is ruptured, superficial ulcerations or excoriations follow, they are covered by yellowish or brownish scales, and when these are thrown off a tender brownish violet cicatrix remains, which for a long time continues sensible. The vesicles often last some

days without rupture, whilst in eczema we have scarcely time to prove their existence at all. Herpes is commonly preceded or accompanied with a certain amount of constitutional disturbance, such as rigors, headache, loss of appetite, thirst, febrile pulse, &c.

Eczema may occupy any portion of the body, but herpes manifests a predilection for particular regions; the lips, the prepuce, and the trunk. Herpes may be developed under the influence of external causes—irritation; under the influence of acute inflammation of mucous surfaces—under that of catarrhal inflammation, herpes *labialis* is usually developed; under that of more or less acute gastro-enteritis, herpes *phlyctenodes* appears.

If we turn to Bateman, we find described six varieties of herpes, viz. *phlyctenodes*, *zoster*, *circinnatus*, *labialis*, *præputialis*, *iris*. Now herpes *labialis* and *præputialis* only differ from herpes *phlyctenodes* in having a determined seat. Herpes *zoster* and herpes *circinnatus* only differ from herpes *phlyctenodes* in the arrangement of the patches; it is therefore only a difference of form. Herpes *iris* is an extremely rare variety, which is presented in the form of small groups of vesicles, surrounded by four erythematous circles of different shades of colour. With the exception of the last curious variety the only distinctions are those of form and seat: essentially the disease is the same in all. Surely, therefore, it would be much wiser to say that this *grouped vesicular disease* may be seated on the lips or the prepuce, may be developed in a series of groups, sometimes forming something like a circle or zone, sometimes presenting an annular arrangement, than to have a particular and tiresome description of each variety.

The herpes *phlyctenodes* is the natural representative of the whole family: here the red patch has no definite form, no particular seat; it may be of the size of a shilling, it may be as large as the palm of the hand;

some of the vesicles, as you see in the case before you, are just appearing, others are decaying; some are very small, a few are comparatively very large. The inferior extremities are much less frequently affected with herpes than other parts of the body. A single crop of vesicles passes through the different stages of its existence in a week. The duration of the disease is determined by new crops and new patches. A single group usually consists of six or eight vesicles; and if observed soon and carefully, you will find each vesicle is developed on its own red spot; but these spots soon coalesce and form a single patch. All the vesicles are renitent, globular, and transparent, on the first day; on the second the fluid they contain is milky; on the third or fourth day they shrivel, and by the seventh or eighth day they are dried up. The sensation of stinging is sometimes very painful, and sometimes prevents sleep. I have known a patient with a patch of herpes over the scapula complain of a sensation as if a hot nail were passing directly through the chest; and this was equally severe on the development of every successive group; and occasionally it continues when the vesicles have disappeared. For some days after the disappearance of vesicles a considerable redness also continues.

The various forms of herpes are not very liable to be mistaken for other diseases; the grouping is sufficient to distinguish them from eczema; the same feature is sufficient to prevent our mistaking them for pemphigus; and there should be no fear of confounding herpes *præputialis* with primary syphilis.

The treatment is usually very simple, being limited for the most part to mild laxatives and lemonade internally, with emollients and sometimes astringents externally.

We must say a few words on the several varieties, and first we will speak of the variety before you, of which you see two specimens, one in a boy of ten, the other in a man of sixty-five; this variety is the herpes *zoster* of Willan, the *dartre phlyctenoïde en zone* of Alibert, the *ignis sacer* of some, the *zona serpiginosa* of others. This variety is represented by several patches of the phlyctenoid variety arranged in a particular form. It is constituted, as you see in the examples before you, by a sort of band or half girdle; in these two cases the eruption does not pass the median line. Rarely is this band parallel to the axis of the body, generally oblique, sometimes perpendicular. I have always observed it to take this oblique direction on the trunk, and in a great majority of cases the trunk was the part affected. One end of the girdle may extend to the thigh when it is developed about the loins; when it is high up, one end may extend over the scapula to the upper part of the arm. Cazenave says, in his experience, it has occupied the right side nineteen times out of

twenty. My observations have led me to a different conclusion; the two cases before you occupy different sides, and my notes indicate seven right and six left. I have never known a perfect circle; but in a case I saw with Mr. Brown some years ago, each limb passed the median line by some inches, and in one of the cases before you it passes the median line in front by a couple of inches; yet it did not, as was formerly supposed, produce death.

The disease is almost always acute, frequently preceded by a certain amount of febrile excitement, which is often considerable; there is at the part a pungent stinging pain for a day or two before the redness is apparent: a certain number of patches are thus developed, the skin in the interval being healthy. Upon these patches groups of vesicles are developed; at first they are small, transparent, and pearly, some of them enlarging very much, others very little; but you always find, and this is well marked in the cases before you, two or three vesicles on each patch much larger than the others. Gradually the fluid becomes milky and sero-purulent; some of them are ruptured, the contents of others are absorbed and they shrivel up; but by the end of a week the whole of a single crop have given way either by rupture or absorption, are followed by a thick crust or desquamation, and by the tenth to the twentieth day the eruption has usually ceased. Sometimes points of ulceration are left; sometimes, in old and debilitated persons, sloughy points are observed; generally, I think, from pressure or rubbing. In many cases a stinging sensation continues long after the eruption has ceased.

In the two cases before you, no evident cause for the disease exists; in neither of them is there much constitutional disturbance: indeed, it has never been my lot to witness the severe symptoms which are described in books; and they afford fair examples of the duration of the disease. In the boy it will not exceed a fortnight; in the man it may exceed three weeks. Though I believe it is by no means rare, I have never known a case of herpes *zoster* in woman; the phlyctenoid form I have often seen; but it is most commonly seen in the old and the young, and more frequently, I think, in the "fall" than the spring. I have known it to occur apparently from excess of alcoholic stimuli, from exposure to cold, and from mental distress.

Herpes *zoster* is not a very serious disease, unless it be the consequence of a serious disease of some organ important to life: in some cases it seems to constitute a crisis: such was Guilbrand's case, "*De vertigine periodica per zonam solutâ.*" It is hardly necessary to say, that an enfeebled state of the general health, whether caused



by excess or by want, must essentially guide our estimate of the gravity of the affection.

The same simple course already alluded to will suffice for the ordinary treatment even of herpes zoster; in the cases before you the parts are protected, and the patients take, twice daily, Mag. Sulph. 3j.; Inf. Rosæ Comp. ʒiss. The object is to prevent the development of fresh vesicles, and to protect from injury those which already exist: the acid and laxative system will usually accomplish what we desire, in as far as concerns the first indication: there are, however, particular conditions of the digestive mucous membrane which may render that plan objectionable; there may be some disease of an internal organ, which will require special attention, but these cases are exceptional. If there be a loaded state of the bowels, that must, of course, be relieved, usually by purgatives: I have never known much of good from the emetic plan. If there be too much arterial action in a person in strong health, recourse should be had to bleeding, but this is rarely called for; and if the patient has been accustomed to highly-seasoned food, it may be well to substitute milder food for it. If it be brought about by misery, generous food, with tonics, should be employed. The second indication, that of protecting the diseased surface, is accomplished by calming pain, favouring cicatrization, and preventing friction, which brings excoriation, ill-conditioned ulcers, or even small sloughs. Emollients, either as lotions, fomentations, or cataplasms, are too apt to soften the crusts and to expose excoriations, and therefore they must be used discreetly. A decoction of mallow with poppy-heads, frequently applied, is useful: if the pain be very severe, lead ointment with opium is sometimes useful, or equal parts olive oil and laudanum: where there are ulcerations, the Ung. Plumbi Comp. with opium answers best. Sometimes powdering the part with starch is a good way of protecting it. The heroic, or ectrotic, plan I do not like; in that plan you apply lunar caustic upon the centre of the red patch before the vesicles appear. I have never employed it myself, but where I have had opportunities of observing it, I have been convinced that it is a vicious method of treatment; that it neither prevents pain nor restrains the formation of vesicles; that when vesicles are already formed it is useless or injurious; that when applied to superficial ulcerations it is useless, but that in some obstinate points of ulceration it may be useful.

I have known the pain left after this affection very distressing, resisting tonics and antispasmodics, opium, belladonna, stramonium: the most obstinate case I ever knew yielded to a blister upon the part. If

that failed, it might be wise to try the use of opium on the blistered surface.

In herpes *præputialis*, although its nature be similar to the form we have been considering, yet it may present a chronic form; and here it sometimes becomes a serious affection: the attacks are repeated, the inflammation sends its effects deeper, the prepuce becomes rough, difficult to retract, and the attempt to do so makes it crack; the opening becomes more and more contracted, until at last it almost prevents the passage of urine, the irritation increases, and the pain becomes distressing. This state of things may be brought about by friction, by chronic discharges from the vagina, by want of cleanliness. This affection sometimes gives rise to mistakes, though it is difficult to understand, except in a case of great carelessness or ignorance, how a case of this kind could be mistaken for primary syphilis. If it be in its vesicular state, the characters of herpes are so distinct that the two affections can scarcely be confounded. If covered with scales, they are thin and flat; those of syphilida are thick and prominent; if there be excoriations, they are superficial, equally so at the centre and the circumference, and grouped: syphilitic ulcerations are deep, with hard raised edges, and covered with a yellow concretion. Still the mistake has been made; herpetic vesicles have been cauterised, mercury has been administered, and the disease has degenerated into a chronic form. Usually, the simplest treatment suffices; acid salines internally, dry lint or emollients externally; but in the chronic state it is not thus easily disposed of; alkaline, or alkaline sulphuret lotions, will fail, and sometimes excision of the part is all that is left for us.

Herpes *circinnatus* we shall reserve till we speak of scalp diseases.

Now you cannot fail to have had forced upon you certain points with regard to herpes: the vesicles are always arranged in groups; there may be many such groups, as in herpes *zoster*, or a single one, as may happen in herpes *phlyctenodes*; it may be in the form of a ring, as in herpes *circinnatus*; or an iris, as in herpes *iris*; these, you will observe, are mere differences of form, not of nature. Again, you may see in it a predilection for particular localities, the prepuce and the lips; but here, again, there is no other modification than arises from certain peculiarities belonging to those localities. Recollect, then, that, under every circumstance, it is a group of vesicles, having, usually, a definite duration, requiring commonly only the simplest treatment, and rarely becoming obstinate, except under bad management.

I do not intend to occupy more of your time at present with the consideration of

any other forms of vesicular disease, though we might profitably study the various appearances presented by scabies. I shall therefore call your attention to a species of pustular disease of which we have several examples—impetigo.

#### IMPETIGO.

Impetigo is characterised by the formation of very small pustules, irregularly gathered together, developed upon a red and humid base. Upon the rupture of these pustules, which sometimes occurs almost immediately after their development, thick, yellowish, greenish, or brownish gummy scabs are formed. The eruption may last from two to six weeks, or in a chronic form may be prolonged indefinitely. To the last those scabs are presented; and when they come away they leave the integument at the point quite red: this red point may be covered with a new scab, or may be quickly restored to its natural state. There are certain parts of the body to which impetigo appears to manifest a preference, particularly the chin, the face, and the scalp; but it often appears in other parts of the body. Bateman described several varieties—the *impetigo figurata*, *impetigo sparsa*, *impetigo erysipelatodes*, *impetigo scabida*, *impetigo rodens*, and another, which he arranged under the species *Porri*go, namely, *impetigo larvalis*. Now I am prepared to maintain that these distinctions, although generally possible, are practically useless. The same elementary lesion is presented in all; it may be accompanied by a greater quantity of inflammatory action in one variety than another—in the *impetigo erysipelatodes* and *scabida*, than in the *sparsa*. The pustules are clustered, as in the *figurata*, while they are single in the *sparsa*. They may be modified, to a certain extent, by the part on which they are developed, as in *impetigo granulata*, which occurs in the scalp; but in all these cases there is the same elementary pustule, quickly followed by the same characteristic scabs, and they all require, unless modified by situation, as in the scalp, the same kind of treatment. All I desire, therefore, is, that you should know the species impetigo; and also bear in mind that it may be modified by the condition of the patient, by the disposition of the pustules, and by the region affected. In this way you will avoid the ennui which cannot fail to attend upon the study of these affections, if you conceive it to be important to name all the varying characters of different forms of disease.

Of the cases before us, the one in which the pustules were developed in clusters upon the cheeks and forehead succeeded quickly to the cure of some respiratory disorder. The case of the young man, in whom the disease is presented on the side of the nose,

succeeded to a cold got in exposing himself uncovered. In the next it succeeded to want and misery, and covered most of the body. In the little girl it came on after measles. In the little boy, after whooping-cough. In fact, among the causes, we had irritating substances; sudden changes of temperature, such as are met with in spring and autumn; the irritation of teeth; the critical period of woman's life; excess or want; and in adult life, especially, mental discomfort.

When impetigo presents itself on the face, it commonly occurs in clusters, so as to constitute the *impetigo figurata*. Less frequently this form occurs on the limbs; but, in either case, it is rarely accompanied by much general disturbance. It may happen where there is much irritability of the system, that the inflammation will be considerable, the heat and itching may be severe; the redness may then assume an erysipelatous character, so as to constitute the *impetigo erysipelatodes* of Bateman: and in those cases the pustules are somewhat smaller than usual, and very quickly open, so as to pour over the surface a yellow purulent fluid, which often forms a gummy diaphanous crust over the part; more fluid continues to be poured out, and the crust thickens. At this time the thick crust, covering a red tumid surface, forms a mask which disfigures the features very much. Those crusts will continue on the part for a period varying from a fortnight to a month; and if there be no new pustules, the exudation is then lessened, the redness is abated, the itching and heat are dissipated, and the crust gradually comes away, and leaves exposed a red glistening surface. As in the case of the little girl before you, there may be an exudation from the uncovered surface, and new crusts may result from it. In many cases great care must be taken to prevent these surfaces from irritation, for they are very ready to produce new pustules, without much coaxing. The case of that little girl has defied me for months. When on the point of getting well, again and again it has happened that some new source of irritation has developed new pustules. The case of *impetigo sparsa* has resisted for many weeks. In private practice I find some imprudences of diet are the things most to be guarded against. In some of these obstinate and old cases, the scabs become very thick, and of a yellowish-brown colour, bearing, as Willan thought, a resemblance to the bark of a tree. This was his *impetigo scabida*. When these thick crusts break and fall off, a new mass is formed. Sometimes they leave large ulcerated surfaces exposed: and in these cases it is not rare to find the lower limbs cedematous.

In many cases we get rid of an attack of

impetigo within a month. In many others, it may obstinately persist for many months. This is mainly owing to indolence on the part of the patient, or some decided constitutional deterioration.

There are certain diseases with which impetigo may be confounded; and among these is the eczema impetiginodes, which is a midway point between the two; but the vesicles, which are always present in the latter form, ought always to prevent confusion. When impetigo affects the chin, it is often confounded with mentagra; but again, the small yellow pustule, with its thick yellow gummy scab of impetigo, without any tubercular induration, is sufficient to distinguish it from the large raised whitish pustule of mentagra, from which there is a less abundant exudation, and darker and drier scab, which, when thrown off, is not again reproduced without new pustules. In the scalp, impetigo is frequently, I may say commonly, mistaken for porrigo. My evidence for that remark you will have hereafter, as well as the means of distinguishing one from the other.

When impetigo occurs even in a weakly or broken person, it does not interfere with life, though it may, in such cases, be a proof of the existing debility, or even of visceral disease. Though it does not compromise life, it is often a serious interference with the comfort of the sufferer; and we must bear in mind that it is often very obstinate, but, at the same time, that it will generally yield to proper treatment.

In the cases before you, the treatment has been modified by the particular state of the system of the patient. In one leeches were applied to the epigastrium to relieve the irritation of the stomach. In another the ioduret of iron was given to combat the general debility which succeeded to whooping-cough. In the case of the little girl, who presented the disease about the nose and mouth after measles, the heat and tumefaction were at one time so great as to oblige us to apply three leeches in the vicinity of the disease. Bear, then, in mind that impetigo may coincide with many different conditions of the system, and that the constitutional treatment must be determined by that view of the case. Supposing a child to be brought to you suffering from impetigo, induced probably by a generally deteriorate state of the constitution, brought about by some disease, such as measles, or whooping-cough, or want, it must be evident to you that the case will require a different treatment to that of an over-fed gross child, who has deranged the alimentary organs and the system by improper food: so it is that one may get well under a judiciously restricted diet; the other will require the most nutritive food and tonic medicines. In all cases I have reason to be satisfied with tepid bath-

ing daily. Vapour baths are in common use; but they frequently increase the redness and irritation. The tepid bath is extremely soothing in these cases; and if the temperature do not exceed  $84^{\circ}$ , the patient may often remain in it with advantage for half an hour. It was the only external treatment employed in the case of the child with scalp disease, whose body was completely covered with impetigo; in some regions presenting the form of impetigo figurata; in others, the impetigo sparsa. At first, beyond soothing, I am generally careless about external treatment. I am satisfied to try the effect of general means; and in many cases the disease will quickly yield to them: but if it resists—if new pustules are developed, unaccompanied with much inflammatory action, while the internal organs are in an apparently satisfactory state, and the general health pretty good, recourse may be had to small doses of arsenic, with almost certain benefit; but you must very carefully watch the administration of that potent remedy.

When the scabs come away, and the integument produces new ones, without new pustules, then it is proper to apply some modifying agent upon the part itself. In some cases astringent lotions, such as alum, zinc, and iodide of iron, will set matters right; in other cases the sulphuret of potash lotion answers still better. A common remedy of the nurse in the children's ward is the Ung. Hyd. Nitratis; and she is not particular about the period when it is applied. When the reproductive tendency is very strong, I have known great good to follow the application of some Acet. Cantharidis to the point by means of a camel-hair pencil.

With the exception of what I have to say of those forms of impetigo which are confined very much to the hairy scalp, I do not intend to devote more time to the discussion of impetigo. I may, however, repeat what I have before stated, that the subject may be made so simple as to be very readily comprehended. Recollect that the elementary lesion is a small pustule, which cannot, therefore, be confounded with ecthyma or mentagra; that it breaks very soon, and that there is a plentiful exudation of sero-purulent fluid, which is concreted in the shape of a yellowish, or brownish, gummy, somewhat semi-transparent, scab; that this scab comes away, and leaves after it a red surface, and that sometimes this surface yields an exudation which scabs again, even without a new pustule, and you have impetigo in its simplest form. Recollect further, that under excitement, or in particular regions, such as the face, the elementary lesion is apt to be developed in clusters, so as to constitute what is known as impetigo figurata; that the inflammatory action may assume greater intensity, exhibiting an ery-

sipelatous appearance, the pustules, in this case, being smaller, but quickly breaking and covering the part with a yellow gummy crust—this is the impetigo erysipelatodes of Bateman; that the scabs may acquire great thickness and ruggedness, so as to bring the affection within Willan's description of impetigo scabida. Recollect further that the symptoms merely vary in intensity; that the prognosis is never serious, unless the affection be the shadow of some serious disease in an important organ; and that the general treatment must, under ordinary circumstances, be adapted to the general condition of the economy—the local treatment being, as we have seen, very simple—and you have, as I conceive, impetigo made easy.

#### SCALP DISEASES.

The diseases which are known as scald-head are, first, vesicular—eczema and herpes; next, pustular—impetigo and porrigo; lastly, squamæ—lepra, psoriasis, pityriasis. Now let us see what is the comparative frequency of the occurrence of those several forms, in this place. Of 100 cases, 76 will be eczema, 5 herpes circinnatus, 12 impetigo, 3 porrigo, 3 pityriasis, 1 lepra or psoriasis. It will be seen, therefore, that our experience is strongly at variance with that of those persons with whom porrigo is an every-day disease. We have now to consider, under the term scalp disease, eczema, herpes, impetigo, porrigo, lepra, psoriasis, and pityriasis; and we will proceed at first with those which are vesicular; but before I do so I may be permitted to make certain general remarks, which will not I think be without their use.

When we look at what passes among infants, especially in crowded places, we observe that at this period of life the system frequently requires, for the preservation of the health of the individual, a certain fluxionary discharge: it may be from the bowels, or the other mucous passages; but it often falls upon the skin, and particularly on that of the head and face, and then exercises a very salutary influence on the health of the individual. It may be presented in the form of eczema, impetigo, or porrigo; but I apprehend the effort of the economy under which the exception takes place in early childhood is the same in all: the peculiar forms being impressed by the constitution of the patient. This effort is directed upon the head more than any other part; no doubt because in infants that organ is the permanent focus of a greater vital activity than any other part of the body. It is impossible to attach these phenomena to any appreciable physical or chemical alteration in the blood; we are therefore obliged to refer it to a fluxionary condition which may be determined by a variety of circumstances. Some possibly hereditary; others dependent

upon the influence of food, regimen, accubitation, and other circumstances in which the infant is placed; but its effects will vary with the temperament, constitution, or disposition of the scalp, or other portion of the skin affected.

In no part of the body, and probably at no period of life, does a certain form of eruption contribute so much to regulate and improve the functions of a suffering organism: an attack of eczema of the scalp during the often severe irritation of teething: and this is often made evident by the fact, that a successful effort to quickly dissipate the eruption is followed by a considerable disturbance to several important organs. The importance of carefully studying these affections will appear more pressing when I tell you that, in the present advanced state of civilization, probably thirteen out of every twenty children in large towns present at some form or other, scalp affections as a protection usually for more important organs. How many premature deaths are owing to the absence of a similar discharge opportunely brought about! How many infants die hydrocephalic, or from diarrhoea, how many others remain a prey to chronic affections, to disorders of the organs of sense, discharges from the ears, genital and other organs, because this salutary action in the scalp was not set up.

Without being able to say what occurs to render this revulsion necessary, because we know too little of what passes in the act of nutrition, we ought still to say that the irritation, of the nature of which so many hypothetical explanations have been given, is not necessarily a cerebral one. If it does not fix itself upon the scalp, or other portion of the cutaneous surface, it will affect some more or less important organ, which may become so disordered as to destroy the individual. Many most urgent cases of infertile disease have been suddenly arrested by a scalp affection, which appeared as a critical symptom. And although I am not prepared to advocate such a course, I do not wonder that attempts have sometimes been made to inoculate porrigo.

A very large number of cases of scalp disease are treated in this establishment: for months it will happen that the number of patients in the scalp ward is not less than twenty-five. Considering that the greater portion of our scalp cases are discharged within six weeks, it must be evident that our field of observation is very large.

Almost all scalp diseases are known by a common term, scald head—a term with which a long train of inconvenience to the sufferer is connected; such as a shaved head, separation from other children, and daily torture, it may be, of the diseased part. Almost all scalp diseases again are subjected to the same plan of treatment, whether the



affection be vesicular or pustular, contagious or non-contagious—eczema or herpes, impetigo or porrigo. It cannot be wondered, then, that with such ideas as to their nature, the treatment should frequently be absurd. It can scarcely surprise any one that the faith of the public in the ability of medical men to cure these affections should be shaken, and that resort should be had to quack medicines and quacks. If such persons be equally ignorant, they have one advantage over the medical practitioner—they usually make their applications themselves: and this is not a small matter. I find that with the same medical means I can cure scalp affections in one ward in a third less time than in the other: so it is with the Mahons at Paris. It is said they cure a large number of cases of porrigo in comparatively a very short time; but other persons, using apparently the same means, do not, it is said, succeed to the same extent. I say apparently the same, because the Mahons have always kept their remedies secret. I do not expect myself that when, if ever, the secret is made known, the treatment of those diseases will be more successful than it is at present, unless every body acquires equal tact with themselves in depilation. Those men do not delegate the dressing to other hands, but they attend to it exclusively themselves; and that, I take it, is the secret of their success. And until medical men generally are made aware of the greater importance of the mode in which remedies are applied than of the remedies themselves, we shall not advance much in the treatment of porrigo.

Every day we hear or read of many cases happening in the practice of a single individual, and if he were attached to a school, or other institution, in which there was a large number of children collected together, the thing might happen; but we have attached to this establishment schools in which there are about five hundred children; occasionally they furnish a case of porrigo, but I have never known it communicated to another child. By occasionally I mean scarcely twice in a year; and of the large number of children brought here as out-patients, I have not known six cases of porrigo in six years. The reason of this apparent difference in the experience of individuals is, I apprehend, to be found in the erroneous principles of classification of scalp diseases to be found in books.

Much as we owe to Willan and Bateman with regard to the classification of skin diseases, nothing is easier than to show that in those of the scalp they have introduced great confusion. The species porrigo of those authors includes six varieties: viz. porrigo larvalis, porrigo furfurans, porrigo lupinosa, porrigo scutulata, porrigo decalvans, porrigo

favosa. Now it is easy to demonstrate that, not only have they included different species under this common term porrigo, but that they have not been faithful to their own system of classification. Thus porrigo decalvans, characterized by a falling off of the hair, is not necessarily a pustular disease: porrigo furfurans is, I apprehend, eczema: their porrigo larvalis I take to be eczema impetiginodes: none of these affections are contagious. These are errors of classification and of diagnosis, which often throw doubts on the nature of tinea, and give rise to the most opposite plans of treatment.

## LECTURES

### ON THE

## DISORDERS RESULTING FROM DEFECTIVE NUTRIMENT.

By G. BUDD, M.D. F.R.S.

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IN my last lecture I considered the characters of Scurvy, and endeavoured to shew you, from a review of the circumstances under which it arises and of the means by which it is prevented and cured, that it results from deficient nutriment only; that its real cause is, prolonged abstinence from fresh succulent vegetables or fruits, or their preserved juices; and that cold, defective ventilation, and the various other causes assigned for it, have no influence in bringing it on, except in so far as they waste the body or impair nutrition.

Scurvy has not, I believe, been observed in any animal but man. Dogs and other carnivorous animals are kept in perfect health for an indefinite time on meat only; while man, though equally capable of digesting and assimilating animal food, becomes scorbutic at the end of a few months, if not allowed in addition some succulent vegetables or fruits, or some article prepared from them. It is not easy to account for this difference, for the animal tissues consumed by man must, it would seem, contain all the elements requisite for the nutrition of the corresponding tissues of his own body. Is it explicable from the fact that man is the only animal that eats his meat cooked? May not the antiscorbutic properties of meat, like those of vegetables, be impaired by heat?

Another form of disease from defective nutriment is brought on by a diet that contains no nitrogen, or an insufficient quantity of this principle. It is attended with wasting of muscles and other tissues; but its



chief characteristic is a peculiar ulceration of the cornea.

For our knowledge of the true pathology of this disease we are indebted to some experiments performed by Magendie, and published, in 1817, in his work on Physiology.

In the first of these experiments, a small dog, fat, and in good health, was put on a diet of pure white sugar and water. Of each he was allowed as much as he would take.

For the first week he appeared to suffer no inconvenience; he was brisk, ate with avidity, and drank as usual. In the second week he began to grow thin, although his appetite continued good, and he ate as much as six or eight ounces of sugar in the twenty-four hours. The urine was abundant, but the evacuations from the bowels were neither frequent nor copious. In the third week the loss of flesh increased, the strength diminished, the appetite was less keen, and the dog lost his former gaiety. At this time a small ulcer appeared at the centre of the cornea, first in one eye, then in the other. The ulcer increased in size, and at the end of some days was more than a line in diameter. It increased in depth also, and soon the cornea was perforated, and the humours of the eye escaped. This affection of the cornea was attended by an abundant secretion from the glands of the eyelids.

The emaciation still went on; and although the dog ate from three to four ounces of sugar a day, he became so weak that he could neither chew nor swallow. He died the thirty-second day of the experiment.

On examination after death, Magendie remarked that there was complete absence of fat; that the muscles were reduced to one-sixth of their ordinary size; that the stomach and intestines were also much diminished in size, and much contracted. The gall-bladder and urinary bladder were distended. The fluids they contained were analysed by M. Chevreul, who found that they had most of the characters which belong to the urine and bile of herbivorous animals. The urine was alkaline instead of acid, and offered no trace of lithic acid or phosphates. The bile contained a considerable portion of picromel, which also exists in large proportion in the bile of herbivora. The *feces*, also examined by M. Chevreul, contained very little nitrogen, which usually enters very largely into their composition.

A second dog was submitted to the same regimen, and the same effects were observed; only that in this the eyes did not begin to ulcerate until the twenty-fifth day, and the dog died before perforation of the cornea had taken place. The muscles and abdominal viscera were in the same state as in the subject of the former experiment. The

characters of the *feces*, of the urine, and of the bile, were the same.

A third experiment of the same kind led to precisely the same results.

M. Magendie next put two dogs on an exclusive diet of olive oil and water. They seemed to do well on it for about a fortnight, when their health began to suffer in the same way as that of the dogs kept on sugar and water; with this exception, that they had no ulceration of the cornea. Both dogs died about the thirty-sixth day of the experiment, and presented the same phenomena as regards the state of their organs and the composition of the urine and bile, as the subjects of the former experiment.

Dogs kept exclusively on gum and water became affected precisely in the same way.

Magendie, supposing these results to follow from deficiency of nitrogen, next tried the effect of feeding a dog on butter only; a substance which, like sugar, oil, and gum, contains little or no nitrogen. The results were the same as in dogs kept on sugar. The dog died the thirty-sixth day of the experiment, and at the time of his death had an ulcer on the right cornea.

Magendie concluded from his experiments, that the ill effects of any of those articles of food taken exclusively, results from the absence of nitrogen; that the nitrogen which enters as a constituent into all the materials of the body, with the exception of fat, is derived solely from the food; and that no animal can long subsist on a diet of which this principle is not an ingredient.

These conclusions were confirmed in the main by some experiments of the same kind performed by Tiedemann and Gmelin; and of late they have received additional confirmation from experiments made by a committee, of which Magendie was an active member, appointed by the Institute in Paris, to investigate the nutritive properties of gelatine. The following is one of their experiments:—

Four dogs were kept exclusively on the fat that surrounds a bullock's heart. At first they ate it with avidity, but at the end of a week they all declined it. They minutely dissected the pieces, laying hold of the smallest portions of muscular fibre, and of cellular tissue, that remained attached to the fat.

They all died: the first on the nineteenth day; the second on the twenty-fourth day; the third on the twenty-eighth day; the fourth on the thirty-fifth day. In all, ulcers appeared on the cornea. On examination after death, all the organs were found atrophied, *but infiltrated with fat*.

This experiment is interesting, as shewing that there may be great atrophy of muscle, and other tissues, in animals loaded with fat. The circumstance of the dogs rejecting the

fat and picking out the smallest portions of muscular fibre, shews, what I have had occasion to remark when speaking of scurvy, the great craving felt for substances much required by the system.

It appears from the experiments I have related, that nearly the same effects are produced by keeping animals on an exclusive diet, consisting either of sugar, oil, gum, butter, or fat—substances which resemble each other in containing no nitrogen, or a very small proportion of it; they being all composed of carbon, or some hydro-carbon, and water. It was thence inferred that the ill effects of this diet resulted from deficiency of nitrogen, which entering largely into all animal tissues, must be necessary to repair their waste. This inference is, no doubt, to a certain extent, true, since Liebig and Dumas have satisfactorily proved that animals obtain their nitrogen solely from their food; but it is far too exclusive. It does not recognise the importance of other principles, which are wanting in these articles of food, but which, although less in amount, yet, like nitrogen, enter constantly into the composition of the body, and are therefore required for its support.

The body is made up of a great variety of elements—oxygen, hydrogen, carbon, nitrogen, sulphur, phosphorus, lime, iron, &c.—not convertible into each other, but each playing an essential part and never found wanting, and all, therefore, necessary for the nourishment of the various tissues. This truth was well illustrated by other experiments of the Paris Committee. They found that animals kept exclusively on albumen, fibrine, or gelatine—substances which, being themselves materials of the body, contain a full proportion of nitrogen—died as soon as those kept exclusively on sugar or fat. But what is still more to the point, they also found that albumen, fibrine, and gelatine, together, are, when taken pure, insufficient for the nourishment of dogs: that while a dog is for a long time perfectly nourished by raw flesh, which, along with these elements, contains the requisite incidental principles, he wastes rapidly, and soon dies of inanition, if kept on a mixture of gelatine, albumen, and fibrine, in their pure state.

From this we must infer, that the ill effects of a diet consisting of sugar, starch, oil, fat, do not result from deficiency of nitrogen only, but from want of other principles also requisite for the support of the body. Perhaps the deficiency of each principle shows itself in a particular way, and becomes manifest in the defective nourishment of that part of the body into which it enters most largely, which is most rapid in its waste, or most delicate in its texture. We should thus have various disorders differing somewhat in their general aspect, but all the

consequences of imperfect nutrition, and each having in some principle its specific remedy. Those disorders appear among the poor in towns, and in persons long shut up in prisons, asylums, ships, but from our ignorance of their physiognomy and distinctive characters, we rarely recognize their true origin and nature. Destruction of some tissue takes place, febrile action is excited, and a malady, which requires improved and more varied diet for its cure, is treated by abstinence and depletives.

All those disorders have this in common, that they occur only in persons who have been subjected for some time to a particular regimen; and that in prisons and asylums they show themselves first, and invariably prevail most, *in those who have been longest confined.*

It would appear, from the published accounts of the experiments of the Paris Committee, that sloughing of the cornea took place in those animals only whose food was deficient in nitrogen. It is probable, therefore, that Magendie was right in the opinion he very early formed, that it is to want of nitrogen that this particular effect is to be ascribed. We know that nitrogen enters largely into the composition of the cornea. Is it in larger proportion in the cornea than in the crystalline, which is equally delicate in structure, but which is not affected in the same degree by a diet deficient in nitrogen? The crystalline, however, is not exposed to the action of the atmosphere, which must increase the waste of the cornea.

It is not in the lower animals only, and in express experiments, that ulceration of the cornea takes place from defective nutriment. The same phenomenon is not unfrequently witnessed in natives of Indostan, who subsist chiefly on rice, which, in chemical composition, differs very little from sugar or starch; being composed of carbon and the elements of water, with little or no nitrogen.

Brett, in his "Surgical Diseases of India," says, "some deplorable instances of such disease occurred among the prisoners in the jails of Mooradabad, Shahjehanpore, and Cawnpore, under our personal observation; and, we believe, in various other parts of India. These unhappy creatures were subject, in the highest degree, to every debilitating cause—imperfect nourishment, their aliment possessing neither diversity nor multiplicity of ingredients; impure air, especially confinement at night in closed wards, surrounded by high walls; excessive heat in summer, sudden cold and great range of temperature in the winter months; fatigue and mental depression. Many of them were exposed to an endemic dysentery, under which, if they did not succumb, they became reduced to the very lowest ebb of debility, torpor, and apathy."

"Almost all the secretions were suspended, excepting that of the bowels. Their tongues were pallid, their extremities shrunk, and the surface of the whole body cold. Even in summer there was no cutaneous transpiration. Their eyes were glassy. Under this the inflammation of the conjunctiva occurred, an ulcer formed on the cornea, which speedily sloughed, and penetrated the whole of the layers, followed by an evacuation of the humours of the eye. It was particularly remarked in all the cases that there was no pain. There was increased secretion from the meibomean and lachrymal glands, and suppuration of the conjunctiva; the anterior chamber became filled with a muddy, purulent, fluid; the ulcer of the cornea sloughed; the lens became evacuated, and the eyeball of course collapsed. Both eyes were often affected; and the patient generally expired in an extreme state of emaciation."

Mr. Brett adds, "the above phenomena resemble those exhibited in animals fed by Magendie on sugar, olive oil, and other unazotized substances, and those when the fifth nerve was divided within the cranium."

While visiting-physician to the Dreadnought, I observed a similar condition, though less in degree, in Lascars on their arrival in this country from India. Many of the merchant-ships trading between this country and India are manned almost entirely by these Indian sailors, who live chiefly on rice. Their health continues good for some months, but *towards the end of the voyage* it begins to suffer, and not unfrequently ulcers form on the cornea. My friend, Mr. Busk, has given me the following notes of four cases, admitted the same day (July 1840) from the same ship.

CASE I.—Mudor, æt. 30, just arrived from Bombay, of which he is a native: was never in England before, but has been at sea eighteen years, in hot climates.

The whole of the right cornea is in a state of ash-coloured slough, overlapped at the edges by loose vascular folds of the conjunctiva, which is throughout of a deep-red colour; lachrymation; no purulent discharge.

The lower and outer two-thirds of the left cornea are in the same condition; the remaining portion is nebulous, and roughened on the surface by superficial ulceration. The pupil can be seen through this portion, and the iris appears healthy.

The right eye became affected before the left. At first there was severe pulsatile pain in the temples, and around the orbits; but, for the last three or four days, he has been quite free from pain. His health, in other respects, appears good, and he is not emaciated. Was quite well on leaving Bombay, and never had anything the matter with his eyes until two months ago, when this complaint came on.

He was discharged from the Dreadnought on the 10th of August, nearly blind.

CASE II.—Ingan, æt. 34, native of Calcutta. Ten years at sea, and twice before in England. Had bad eyes three years ago in a ship called the Benares, but not since. There is now nebulosity and an irregular ulcerated surface towards the lower edge of each cornea. He has also painful swelling and stiffness of the left ankle, which he has injured a month before. The swelling, which is hard and considerable, is probably scorbutic. Has no other complaint.

CASE III.—Reunjonalli, æt. 50, native of Madras. Ten years at sea. Never had any complaint of the eyes until a month ago when the left eye became affected. A fortnight afterwards the right became affected in the same way. Had had no pain in the head, but sharp, lancinating, pains, in the eyes themselves.

In the left eye the upper part of the cornea is tolerably clear, but the lower two-thirds are opaque, of a dirty-olive brown, and of irregular surface: vision is nearly destroyed in this eye.

The right eye still retains considerable vascularity. About two-thirds of the cornea have apparently sloughed, at least through the external laminae, and the iris has fallen forwards and bulged outwardly. Has still lancinating pains in this eye.

He was discharged convalescent on the 8th of August.

CASE IV.—Muhamet, æt. 21, native of Cochin. Four years at sea. First voyage to England. Had nyctalopia a month ago, but no ophthalmia till the last fortnight. Has now inflammation of the conjunctiva and a small but deep ulcer on the inner edge of the cornea of the left eye.

He was discharged convalescent on the 11th of July.

All these men came, as I have remarked, from the same ship, and during the voyage had fared alike. Their food consisted of rice, salt-fish, ghee (a sort of butter), curry of fish, and sometimes peas. In their own country, in addition to these articles of food, they have fresh vegetables, milk, bread, and occasionally meat.

The treatment adopted was the same, or nearly the same, in all, and consisted of milk diet, with fish and eggs; bark and soda; blisters; and solution of nitrate of silver to the eyes.

The frequent occurrence of this ulceration of the cornea in Lascars, whose diet while at sea has little variety; the fact that it shows itself only towards the end of a long voyage, and that fresh sailors are not affected after their arrival in port, when their diet is again more varied; and the circumstance that both eyes are generally af-

fectured alike, show that it has its origin in imperfect nourishment.

It's not being always attended with great emaciation, further shows that it does not result from simple inanition, but from want of some elementary principle in the diet. What this principle is, we cannot as yet pronounce with certainty. The circumstance noticed in the account of Mudor, that he was not emaciated, tends to show that in this case nitrogen is not the principle in default. Nitrogen enters largely into the composition of the muscles, which are always found much wasted in animals kept on a diet deficient in this principle. The muscles, however, might have been wasted even in this case, and the appearance of emaciation prevented by the presence of fat, which the eating largely of rice would tend to produce.

The disease in the Lascars is not perhaps precisely the same in origin as the disease observed by Mr. Brett in the jails in India. He expressly remarks that the sloughing of the cornea and destruction of the eye is unattended with pain; while all the patients brought into the Dreadnought complained of severe pain in the eyes and temples. The prisoners had also diarrhoea, and various other ailments wanting in the sailors. Their diet was probably more restricted than that of the sailors, and the disorder of health greater.

The ulceration of the cornea in Lascars is quite independent of scurvy. The two diseases may occur together, each arising from its own special cause, but they have no necessary connection with each other. Three of the four Lascars whose cases I have given had no marks of scurvy; while of the numbers of men I have seen brought into the hospital from English vessels, in the worst state of scurvy, there has not been one with the slightest ulceration, or even opacity, of the cornea.

Neither scurvy, nor the disorder of the Lascars, is attended with much impairment of intellect or memory, or with any striking nervous symptoms, to show that the nutrition of the brain or nervous centres is much affected. The brain contains a large quantity of fatty matter, and its nutrition suffers when there is imperfect assimilation of carbonaceous matters. The wasting of the brain in diabetes, and the weakness of intellect that attends it, are no doubt owing to imperfect nutrition of the organ.

Without a knowledge of the particular element wanting in the food of Lascars, we cannot point out a more definite means of prevention than a more varied diet. If nitrogen were the deficient element, it might be supplied by cheese, into which this principle enters largely, and to which they have no

religious objection. I should strongly recommend a large stock of this article in ships manned by Lascars.

But these are not the only circumstances in which ulceration of the cornea results from imperfect nutrition. The same thing occasionally happens in the advanced stage of typhoid fever, when the body has been much reduced, and the patient long kept on a uniform low diet, or on a diet composed of farinaceous matters chiefly.

The first instance of this that attracted my attention was in a lad under the care of Dr. Watson, in the Middlesex Hospital, in 1836. He had been ill some time of fever, when superficial ulceration appeared on the lower half of each cornea. Dr. Watson requested Mr. Arnott to see the patient with him, and the result of their consultation was, to order animal food, quinine, and a lotion, containing nitrate of silver, to the eyes. These measures immediately arrested the ulcerative process, and the lad rapidly recovered.

In the three following years, during which I had to treat a large number of fever cases in the Dreadnought, I met with four instances of the same kind, all occurring in an advanced stage of fever, before a generous diet had been granted.

The ulceration, as in Dr. Watson's case and in the Lascars, occupied the lower half of each cornea. It was superficial, and appeared alarming from the rapidity with which it spread; but its progress was immediately arrested, and the ulceration rapidly healed, without leaving a visible cicatrice, under the influence of animal food, wine, quinine, and the local application of the 4 gr. solution of nitrate of silver. The ulceration was proof, in each case, that an error of treatment had been committed in keeping the patient too long on a uniform or unnutritious diet.

The ulceration was attended with pain, and with redness of the conjunctiva. The circumstance of its affecting chiefly the lower half of the cornea is perhaps attributable to this half being more exposed than the upper half, which is somewhat screened by the dropping of the upper eyelid, especially in the state of prostration that attends continued fever.

After protracted fevers, the intellect often remains for a long time childish; and the hair falls off, or becomes fine and curly; the effect probably, like the ulceration of the cornea, of defective nutrition.

The great wasting of the body in typhoid fever renders the effects of insufficient diet more obvious; and is the cause of the ravenous appetite, and the great craving for animal food, that exists during convalescence, and until the body is restored to its healthy standard. It is another instance of



the great relish there almost invariably is for substances much required by the system. It is unnecessary to add, that this longing for animal food should, with certain precautions, be always indulged.

Ulceration of the cornea from defective nutrition, probably occurs occasionally in most diseases attended with great wasting, especially during the period of growth, when the wants of the system are greatest, and when the effects of an insufficient diet are most quickly seen. In confirmation of this, I may cite the following passage from Dr. Mackenzie's work on Diseases of the Eye :

"The subjects of ulcer of the cornea, and especially of the deep ulcer, are rarely robust or in a good state of general health. On the contrary, they frequently present the indubitable signs of great weakness, and sometimes even of inanition. In emaciated infants particularly, I have repeatedly seen the cornea of one or both eyes become thin and prominent, and give way, without much, and even without any apparent inflammation. The wasted state of the body, in such subjects, arose from various causes, as chronic diarrhoea, cough following measles, and syphilis. In 1832 I saw several instances of the same destructive ulceration of the cornea, occurring after malignant cholera. I have sometimes been led to compare the state of such eyes to those of the dogs in Magendie's experiment, which being fed, or rather starved, on white sugar and distilled water, died from exhaustion; their death being preceded by perforating ulcer of the cornea, and evacuation of the humours."

Ulceration of the cornea, like scurvy and other diseases from imperfect nutrition, shows itself most in those who have been wasted by previous illness. There can be little doubt that simple losses of blood would have the same effect as exhausting maladies, and cause ulceration of the cornea in persons kept on an insufficient diet, or who, from some weakness of the assimilating organs, are imperfectly nourished.

Magendie has shown that this effect is produced by merely abstracting the fibrine of the blood. He bled an animal frequently, and after each bleeding again injected into its veins the blood deprived of its fibrine. After this operation had been several times repeated, at certain intervals, the conjunctiva became red, the cornea opaque, the impression of light painful; the animal had, in short, all the symptoms of severe ophthalmia. At the same time he became dejected, and the skin ulcerated in all those parts on which the weight of the body rested. The eyes were rapidly cured, and the animal restored to its former condition, without any other remedy than a nourishing diet.

Does the hair, which becomes weak and

fine after fevers, undergo a similar change after exhausting losses of blood?

The chronic ulceration of the cornea in scrofulous subjects, has many characters in common with the ulceration I have already noticed, and which shew that it depends on imperfect nutrition. It comes on during the period of growth, and in children reduced by measles, scarlatina, whooping-cough, or any exhausting malady. The fact of scrofula coming on after each of the eruptive fevers, shows that it does not depend on the special nature of the poison, but on the exhausting influence of those maladies which reduce the body and weaken the assimilating functions.

It differs from the former cases in not being caused solely by deficiency of food, but by weakness of the assimilating organs. Imperfect nutrition may obviously result from either of these causes—from insufficient food, or from weakness of the assimilating functions, which are unable to convert the food into the constituents of the body. Of disease produced in the latter way, perhaps the best example is diabetes: the food may be more than sufficient for health, but the powers of digestion are weak, and the saccharine principles, instead of being assimilated, pass through the system without contributing to its support.

Scrofulous ulceration of the cornea, and scrofulous disease in general, is chiefly dependent on imperfect assimilation, and may often be traced to inherited weakness of constitution; but its frequent occurrence after exhausting maladies, its great prevalence among children who are ill fed, and the good effects of a richer and more varied diet, shew that insufficient food is of itself sufficient to produce it.

Among the remedies of scrofula, pure air, and a tonic, nourishing, regimen, will, perhaps, always occupy the first place.

The cornea—from being an object of sight; from its extreme delicacy, which makes it so susceptible of changes of structure; and from its transparency and office, which at once betray every change of structure to the patient and to others—is admirably adapted to give indication of defective nutrition, as far as the elements which enter into its own composition are concerned. But we must not suppose that the effects of deficient nourishment are manifested solely, or always first, in this structure. We have seen, indeed, that, in the most advanced stages of simple scurvy, the cornea never suffers.

The strange forms of disease that swell the mortality during seasons of famine, and the changes of structure that we find in various organs in persons dead of chronic diseases, in which the assimilating functions were much impaired, show that there are many



other forms of disease produced by defective nourishment, and that much is yet wanting to complete this important chapter of general pathology. We have just an intimation that softening and ulceration of the intestines, and softening of the brain, are in some cases the consequence of insufficient nutriment, and are best treated by tonic remedies and a nourishing regimen.

A consideration of the forms of ulceration of the cornea which I have brought together, shows, what an attentive study of the diseases of any organ will force upon us—that the treatment, at any rate the general treatment, should be directed less by the external characters of the diseases, which are often alike in diseases essentially different, than by the nature of the cause by which the disease was produced. It is the cause of an inflammatory affection that mainly determines its course and character, and the influence that remedies exercise over it. Every department of pathology abounds with illustrations of this principle; and shews us the paramount importance of a searching inquiry into the causes of disease.

Since excess in one element affords no compensation for deficiency of another, and since there is almost universally a great craving for substances required for the system, animals kept on articles of food that contain a small proportion of nitrogen will consume a proportionably large quantity of them. Potatoes contain but little nitrogen, and therefore must be eaten in large quantity if they are to form the sole support of the people. An Irishman eats many pounds of potatoes a day, and even then is very imperfectly nourished, if he has no butter-milk, or other food that contain a larger share of nitrogen. This fact was known more than a century and a half ago. Sir C. Wren, at one of the meetings of the Royal Society, at which he presided, remarked, "that it had been of late discovered that the blacks who live only upon potatoes are apt to die of dropsy, and that therefore the planters had found it necessary to allow them bread and milk, which prevented it; and that in Ireland, where the people feed much on potatoes, they assist themselves by drinking sour milk, to make the potatoes digest the better."

Rice, like potatoes, contains a very small proportion of nitrogen, and in India, where it forms the chief subsistence of the people, the quantity which each man consumes is almost incredible. In India, and in Ireland, the consumption of starch is much greater than the system requires; and, as Liebig has remarked, the superfluous quantity either passes through the bowels undigested, or is expended in the formation of fat.

It is therefore a principle, not of humanity only, but of economy, in all prisons and

workhouses, to supply the inmates with the elements required for health in their due proportion. Whatever of any one principle is in excess, passes through the system without contributing to its support, and without allaying the sense of hunger which the absence of other principles may occasion. To a man kept on potatoes, an ounce of meat or cheese will give more support, and more allay the sense of hunger, than a pound of rice.

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## RESEARCHES INTO THE NATURE OF CERTAIN FREQUENT FORMS OF DISEASE

CHARACTERIZED BY THE PRESENCE OF  
OXALATE OF LIME IN THE URINE.

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[Continued from p. 643.]

SINCE my last communication has appeared, I have derived considerable satisfaction from the perusal of the elaborate and philosophical work of Professor Liebig, on Physiological and Pathological Chemistry. This distinguished philosopher has, I find, traced the source of oxalic acid, when present in the animal economy, not to any transmutation in the elements of sugar, but to the oxidation of uric acid\*. This is at least a strong corroboration of the accuracy of the view I ventured to advance in Guy's Hospital Reports, in April last, and to which I referred in my last paper. In fact, the only difference between the results arrived at by Professor Liebig and myself consists in this, that he regards the oxalic acid as the result of the oxidation of uric acid, whilst I considered it as the result of the rearrangement of the elements of urea giving up at the same time an atom of oxygen. The only question which remains now is, not whether oxalic acid is generated from sugar, but whether uric acid or urea is its source. This, however, is a question of but little importance in a practical point of view, as the close relation between urea and uric acid is admitted by all.

If the elements of four atoms of water and three of oxygen be added to one of uric acid, they will exactly express the

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\* Animal Chemistry, by Dr. Justus Liebig, 1842, pp. 137, 140.

composition of two atoms of urea and six of oxalic acid, into which substance it is therefore legitimate to suppose they are convertible.

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 1 \text{ atom uric acid} & = 10 \times 4 \times 4 \times 6 & \\
 4 \text{ atoms water} & \} & \\
 3 \text{ atoms oxygen} & = & 4 \times 7 \\
 \hline
 & 10 \times 4 \times 8 \times 13 &
 \end{array}$$

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 2 \text{ atoms urea} & = 4 \times 4 \times 8 \times 4 & \\
 3 \text{ atoms oxalic acid} & = 6 \times & 9 \\
 \hline
 & 10 \times 4 \times 8 \times 13 &
 \end{array}$$

Then, as it has been already shown that each atom of urea, with the addition of water, contains the elements of oxalic acid and ammonia, *minus* one atom of oxygen\*, it follows that uric acid may be convertible into oxalic acid and ammonia with no other product.

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 2 \text{ atoms urea} & = 4 \times 4 \times 8 \times 4 & \\
 4 \text{ atoms water} & = & 4 \times 4 \\
 \hline
 & 4 \times 4 \times 12 \times 8 &
 \end{array}$$

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 2 \text{ atoms oxalic acid} & = 4 \times & 6 \\
 4 \text{ atoms ammonia} & = & 4 \times 12 \\
 \hline
 & 4 \times 4 \times 12 \times 6 &
 \end{array}$$

And, consequently, that one atom of uric acid, added to one of oxygen and eight of water, will represent the elements of five atoms of oxalic acid and four of ammonia; thus—

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 1 \text{ atom uric acid} & = 10 \times 4 \times 4 \times 6 & \\
 8 \text{ atoms water} & \} & \\
 1 \text{ atom oxygen} & = & 8 \times 9 \\
 \hline
 & 10 \times 4 \times 12 \times 15 &
 \end{array}$$

$$\begin{array}{rcl}
 & \text{C. N. H. O.} & \\
 5 \text{ atoms oxalic acid} & = 10 & 15 \\
 4 \text{ atoms ammonia} & = & 4 \times 12 \\
 \hline
 & 10 \times 4 \times 12 \times 15 &
 \end{array}$$

*Symptoms accompanying the secretion of oxalic acid.*—It is difficult, from the comparatively limited experience we have as yet had of this ailment, to offer a very satisfactory account of the symptoms attending it; and for a detail of these I would venture to refer to the cases appended to this paper. As a

\* Guy's Hospital Reports, April 1842, p. 122. An error has crept into the text of the formulæ there given, from the atom of oxalic acid being stated as double: instead of two atoms of oxalic acid, the word one should have been printed. The figures are perfectly correct.—G. B.

general rule, however, persons labouring under the disease under consideration are generally remarkably depressed in spirits, and their melancholy aspect has often enabled me to suspect the presence of oxalic acid in the urine. I have never witnessed the lurid greenish hue of the surface to which Dr. Prout has referred. They are generally much emaciated, excepting in slight cases, extremely nervous, and painfully susceptible to external impressions, often hypochondriacal to an extreme degree, and in the majority of cases labour under the impression that they are about to fall victims to consumption. They complain bitterly of incapability of exerting themselves, the slightest exertion bringing on fatigue. In temper they are irritable and excitable; and in men the sexual power is generally deficient, and often absent. A severe and constant pain, or sense of weight, across the loins, is generally a prominent symptom. The mental faculties are generally but slightly affected, loss of memory being sometimes more or less present. Well-marked dyspeptic feelings are always complained of. Indeed, in most of the cases in which I have been consulted by their medical attendants, I have been generally told that the patient was ailing, losing flesh, health, and spirits, daily; or remaining persistently ill and weak, without any definite or demonstrable cause. In a few the patients have been suspected to be phthisical. It is, however, remarkable that I have never yet met with a case of this disease in which phthisis was present.

Regarding the *causes* of the secretion of oxalic acid, they were, in the majority of cases at least, generally well marked; and in nearly all, the predisposing cause was nearly the same, viz. a chronic and persistent derangement of the general health, or the result of previous acute disease, dyspepsia, injury to the constitution by syphilis and mercury, by child-bearing and over-lactation, by venereal excesses or intemperance. The exciting cause has generally consisted in some circumstance which has determined the irritation to the urinary organs. Of these, exposure of the lower part of the spine to cold, mechanical violence inflicted over the kidneys, unnatural excitement of the genital organs, as shown by the frequent occur-

rence of involuntary seminal omissions, or irritation from passing a bougie, have most generally constituted at least the most apparent exciting cause. In many cases, however, no other obvious cause existed than great mental anxiety, produced often by extreme attention to business some time previously.

The pathological cause of many of these symptoms, as well as the loss of strength and emaciation present in these cases, is in all probability to be partly explained by the relation existing between the essential azotised element of our food (at least of that derived from the animal kingdom, and in part from the vegetable), viz. the protein of Mulder\*, and the uric acid or urea, which, on one of the two hypotheses to which I have adverted, is generated, to appear in the urine as oxalic acid. Professor Liebig has indeed shown that the production of the characteristic ingredients of animal secretions is less to be regarded in the light of a generation of new matter, than of the re-arrangement of the elements of principles with which we have been long familiar. Thus it appears that two atoms of blood added to two of oxygen and two of water, contain the very same elements as one atom of choleic acid, the essential ingredient of bile, and two of urate of ammonia. Consequently it is fair to presume that the conversion of blood into the most important ingredients of the urine and bile, by producing a drain upon the system, aids, at least, the emaciation of the patient. I have, however, shown, by numerical data†, that in addition to the oxalic acid, a great excess of urea was generally present in the urine; and it is a very remarkable circumstance that the elements of blood and muscular flesh, with the addition of oxygen and water, are identical with those of urea, bile, carbonic acid, and ammonia, being substances which are eliminated from the circulating mass, or produced by the metamorphosis of tissues, and thrown out of the system by the kidneys, liver, lungs, and skin; so that the disease under consideration may be regarded as a case in which the demand for nutriment in the body exceeds the supply. Thus, if we take the empirical

formula of dried fresh blood, or muscular flesh, for they are identical, as assumed by Liebig (from the analyses of Playfair and Bökmann\*), we shall be struck with the remarkably close relation borne by the ingredients of the secretions to which I have alluded, to the pabulum whence they are generated.

Generated:				
	C.	N.	H.	O.
2 atoms blood	= 96	12	78	30
10 atoms water	=		10	24
14 atoms oxygen				
	<hr/>			
	96	12	88	54
<hr/>				
	C.	N.	H.	O.
1 atom choleic acid (essential ingredient of bile)	= 76	2	66	22
4 atoms urea	= 8	8	16	8
12 atoms carbonic acid	= 12			24
2 atoms ammonia	=	2	6	
	<hr/>			
	96	12	88	54

The ready conversion of the urea into oxalic acid and ammonia has been explained above.

*Treatment.*—This, in the majority of cases, has been very successful; a few only resisting all the plans which were adopted. As a general rule, the functions of the body, where obviously imperfect, should be corrected, the general health attended to by the removal of all unnaturally exciting or depressing influences, the skin should be protected from sudden alternations of temperature by a flannel or woollen covering, and the diet carefully regulated. This has generally consisted of well-cooked digestible food, obtained in about equal proportions from the animal and vegetable kingdom; all things which tend to produce flatulence being carefully avoided. The drink should consist of water, or some bland fluid, beer and wine being excluded, especially the former, unless the patient's depression render such positively necessary. A very small quantity of brandy in a glass of water has generally appeared to be the most congenial beverage at the meals. The administration of nitric acid, as suggested by Dr. Prout; or what appeared to be preferable, the nitro-hydrochloric acid, in small doses, in some bitter infusion; or, when necessary, laxative mixture, was, with minute doses of mercury, generally successful, if continued a suf-

\* Jahres-Bericht über die Fortschritte der Physischen Wissenschaften, p. 641. Tübingen, 1840.

† MEDICAL GAZETTE, p. 641.

\* Animal Chemistry, p. 123.

ficient length of time. In cases where these failed, active tonics, especially the sulphate of zinc, appeared to be of great service, by subduing the irritable state of the nervous system. The shower-bath, by acting in a similar manner, has been also of great service. There is one remedy which appears to exercise a marked influence over the characters of the urine, and which, from the small amount of experience I have had with it, seems to hold out the probability of its great utility in the disease under consideration: I allude to the colchicum, which, it is now generally admitted, exerts an immense influence over the organic system of nerves, and the functions under its control. The character of the urine is remarkably influenced by this drug, an excess of uric acid generally being present during its administration; and in two cases, in which oxalate of lime existed in abundance before its employment, uric acid appeared after a few days as a deposit, and nearly entirely replaced the oxalate; a circumstance generally observed during the successful treatment of this disease by other remedies. In no case have I seen the disease suddenly yield; it has generally slowly disappeared *pari passu* with the decrease in number and size of the crystals of the oxalate.

I have selected the following cases from those of which I have preserved notes, on account of their illustrating the chief varieties of ailments in which I have met with the oxalate, more than for the sake of pointing out the treatment. I only trust that they will appear of sufficient importance to draw attention to the subject generally, and to impress my professional brethren with the fact of the very frequent, and very generally overlooked, production of oxalic acid in the animal economy.

**CASE I.** — *Intense hypochondriasis; emaciation; copious discharge of crystals of oxalate of lime, with excess of urea.*

On Feb. 15th of the present year, I was consulted by Mr. W. Stone, in the case of Mr. B——, a gentleman residing in a densely populated district of this metropolis. He was a remarkably fine man, about thirty years of age, of dark complexion, and whole expression strongly characteristic of deep melan-

choly: he was highly educated, and appeared to have painfully susceptible feelings. It appeared from his history that, until within the last four years, his health had been excellent; at that time he contracted a sore, which was regarded as syphilitic, and so treated with, *inter alia*, abundance of mercury and iodine, which appeared to have aided in bringing on an extremely cachectic condition. Partially recovering from this, he left England on an eastern tour. He visited Malaga, Egypt, and returned to England via Constantinople. At each of these places he underwent treatment for what he regarded as a return of venereal symptoms, apparently only manifested by relaxation of the throat producing hacking cough. At the latter place he fell under the care of Dr. Mac Guffee, who evidently took a very correct view of his case, and he received decided benefit from his treatment. At last wearied and dispirited, with an irritable throat, bearing about with him what he regarded as a venereal taint, and tired with wandering, he returned to England, a prey to the most abject hypochondriasis. When I saw him his naturally expressive countenance indicated despair: he complained bitterly of the inefficacy of medicine, and seemed only in doubt whether he were doomed to die of syphilis or phthisis. The pulse was quick and irritable: tongue morbidly red at the tip and edges, and covered in the centre with a creamy fur. He had lately lost much flesh; he was troubled with a constant hacking cough, which evidently depended on an enlarged uvula; for on examining the chest I could not succeed in detecting any evidence of disease. There was extreme palpitation, increased by eating and by exercise, much flatulent distension of the colon, with pain between the shoulders, across the loins, and over the region of the stomach; extreme restlessness, and nervous excitement, accompanied every action. The bowels were inclined to be constipated; urine copious; appetite rather voracious, but unsatisfying; skin acted imperfectly.

Feb. 15th.—The urine passed last night was acid, pale, of specific gravity 1.0295, contained much mucus, with abundance of flesh-coloured urate of ammonia in suspension. On warming a por-

tion, so as to dissolve the latter, a very copious crystalline deposit of oxalate of lime, in cuboid crystals, was rendered beautifully visible by the microscope. A large excess of urea was present, the addition of an equal bulk of nitric acid rendering some of the urine placed on a watchglass nearly solid in ten minutes. The urine passed this morning was precisely similar.

℞ Acid. Nitrici Acid. Hydrochlor. aa. ʒj. ;  
Inf. Serpentariæ, ʒxj. ; Syr. Zinzib. ʒj.  
• M. capt. ʒj. ter die.

℞ Ext. Aloes Pur. ij. ; Conf. Opii,  
gr. iij. M. ft. pil. o. n. s.

Allowed a bland nutritious diet, with three glasses of old sherry daily: no vegetables, butter, or sugar.

27th.—Has continued the treatment up to this date with very marked improvement; his expression is now cheerful; bowels act freely and healthily; pain much less; skin active; throat not so troublesome.—Pergat.

The night urine was now of lower specific gravity, being 1·020, scarcely containing an excess of urea: a slight deposit of urate of ammonia was present, mixed with but a small quantity of oxalate of lime in crystals. The morning urine contained less of the oxalate.

He continued this treatment patiently and persistently until March 20, when he was so much better that he desired to take a country trip. I discontinued his medicines, and ordered him a mild tonic aperient draught occasionally.

May 1st.—I again saw this gentleman. He has gained strength, flesh, and spirits: he only complained of occasional headache, and a dread of a return of his ailment, and is anxious to break through his restrictions of diet. The urine now contained no excess of urea, and was nearly free from oxalate of lime. An occasional aperient was ordered him.

June 4th.—He again called upon me: he is free from disease, and his most pressing evil seems rather to arise from a lurking dread of phthisis than aught else. The urine is natural.

CASE II.—*Irritable bladder following repeated gonorrhœa; dyspepsia; severe lumbar pain; triple phosphates followed by crystals of oxalate of lime.*

I was requested by my friend, Mr. Complin, of Charter-House Square, to

see a patient of his, where, from his symptoms, he suspected the disease under consideration existed. He was a fine florid person, ætat. 25, who, from his own confession, had been most irregular in his habits: he owns to having laboured under twenty-five different attacks of gonorrhœa. Eight years ago he had cystitis, following the injection of some fluid into the urethra for the cure of gonorrhœa; he at the same time drinking a bottle of port daily. During this attack he passed a large quantity of bloody mucus, which continued pretty constantly for five months; nor did it entirely cease for fifteen months. He was then treated by Dr. Budd, of Plymouth.

He spent the year 1837, and part of the succeeding one, in yachting to the West Indies and Southern Africa. He then returned to England, and got married. Since then his habits have been more regular, occasionally only indulging in wine. His appetite, however, continued to be, as it ever was, most voracious, often eating, as he at least declares, three pounds of meat and bread for dinner.

In January 1842, he fancied he had some obstruction in the urethra, and passed a bougie: this produced much irritation, and was followed by intense pain over the left kidney, darting to the sacro-sciatic notch: this has continued up to the time I saw him (April the 23d), occasionally only being absent for a day or two, always being reproduced after partaking of a hearty or indigestible meal. Walking does not appear to increase the pain; on the contrary, although its severity often cripples him, yet if he can succeed in walking for a few yards he generally becomes relieved.

When the severe pain is absent there is always a considerable amount of tenderness on pressure over the left kidney. To add to his annoyances, he suffers considerably from irritability of the sexual organs, attributed to his rarely being able to indulge in intercourse, in consequence of his wife suffering from profuse menorrhagia.

April 23d.—The urine passed last evening was faintly alkaline, of specific gravity 1·028, of natural colour, and appeared to contain a dense mucous deposit, which, under the microscope, was found to consist of splendid prisms of triple phosphate mixed with stellæ,



formed by a number of finer prisms cohering together: the whole presenting a magnificent appearance when viewed as an opaque object. By repose, an iridescent film of crystals of the triple salt formed on the surface of the urine: on the application of heat an amorphous deposit of phosphate of lime. On the addition of acetic acid to the turbid urine under the microscope, the whole deposit dissolves; the prisms vanishing much more rapidly than the stellæ.

24th.—The urine passed this morning was neutral, of a deep amber colour; its specific gravity was 1.031; it contained a mucous cloud, entangling a few prisms; on the application of heat a thick deposit of phosphate fell. A large excess of urea was present: the addition of nitric acid producing a rapid growth of crystals of the nitrate of urea in a few seconds.

25th.—His symptoms continued the same. The urine was again examined: that passed last night was acid, of deep amber colour, and of a density of 1.030: it contained merely a delicate mucous cloud in suspension, there being no distinct deposit: on the application of heat a deposit of phosphates, soluble in acetic acid, occurred. A large excess of urea was present. On placing a drop of the urine under the microscope, it was found abundantly loaded with splendid large octohedral crystals of oxalate of lime, unmixed with phosphates or urates.

26th.—The urine passed this morning much resembled the night specimens, save that it was quite free from oxalate: its specific gravity was 1.030, and was loaded with urea: it did not become turbid by heat.

May 2d.—I again saw my patient: up to this time he had taken no medicine, except a brisk purgative, as I was anxious to watch the urine. He now stated that since its action the lumbar pain had become much diminished. He boasted to me that two evenings previous he had drank a bottle and a half of port at dinner, and felt better for it. He begged to be allowed to avoid physic, unless he became worse; and it was with some difficulty that I procured a specimen of urine.

3d.—The urine passed last evening was acid, of deep amber, specific gravity 1.030, contained no visible deposit, but the microscope detected an abundant

deposit of octohedral crystals of oxalate of lime diffused through it: it deposited phosphates by heat, and contained a large excess of urea.

4th.—The urine passed this morning resembled the last described specimen: both were remarkable for the only appearance they presented when poured from one vessel to another—a circumstance probably depending upon the great excess of urea it contained\*.

[To be continued.]

## ORGANIC TISSUES,

THEIR MODE OF FORMATION, PROPERTIES AND ANALOGIES.

By JOHN COVENTRY, Surgeon.

(For the London Medical Gazette.)

As a due acquaintance with the phenomena of crystallization may be termed the key-stone to the study of inorganic nature, equally indispensable to that of physiology is a just appreciation of the phenomena of cytogenesis.† The former regulates the investigations of the mineralogist, the geologist, and the chemist; the latter affords the physiologist the grand and sole clue to the intricate labyrinth of vitality.

I venture this remark, *in limine*, because of its universal applicability to the process of development, from the evolution of the lowest parasitic fungus to that of the excitable mimosa; of the meanest vegetative polyp to infinitely elaborate man.

But all-important to the physiological student as is the comprehension of this principle and its results, he will find it by no means easily attainable, our elementary physiological works treating of cellular evolution far too cursorily and superficially; whilst in the profound and elaborate treatises of our German neighbours the leading facts of the subject are too often obscured, by mystifying, however ingenious hypotheses, scattered, moreover, throughout a vast tract of miscellaneous authorship.

To collect, in some measure, the *disjecta membra* of the cytogenetic fabric, and simplify, as far as possible, this branch of physiology, is the pur-

\* Erratum, page 642, in note, fifth line from the bottom, for "citrate," read "urate."

† Cytogenesis (*κτρωσις - γενεα*), cell-generation, a clumsy word; or I should have preferred the vernacular.

port of the ensuing observations; and should they tend to remove but the slightest obstacle to the student's progress, the writer's object will be amply fulfilled.

Conformably with this design, I shall endeavour to consider (instituting, as I proceed, such analogies as the closest structural and functional correspondence seems to warrant) —

1. The subject of cytogenesis generally.

2. The leading modifications of the cellular type, as exhibited

a. In the composition of the various organic tissues.

b. Under certain pathological conditions.

1. Of cytogenesis generally.

Schleiden's admirable observations, published in 1838, form the nucleus of all subsequent cytogenetic discoveries. Researches on the development of phanogamous plants led this gifted physiologist to conclude, "*that the early embryonic condition of these vegetables resembled the persistent economy of the lowest cellulares*;" as also to the establishment of that most important principle, "*the universality of the cellular form of development throughout the vegetable world*."

The later researches of the no less talented Schwann have induced similar conclusions with respect to animals. The discoveries of these illustrious physiologists, therefore, constitute the pillars of developmental science. To them am I principally indebted for the subject matter of the following observations.

The essential elements of every organic texture are, a *nucleated cell* (*cytoblast*) and its *nidus* (*cytoblastema*). Each of these I shall attempt to describe.

1. The *cytoblastema* (phycomater, organic mucus, *plant*; matrix, zellenkeimstoff, *animal*) stands first in order of appearance, being more abundant and persistent the lower in the scale of vegetation the individual. In the simplest forms of cellular life, algæ, fungi, polypi, infusoria, &c., the cytoblastema exists, previous to any trace of organization, as a kind of gelatinous slime. Its components are, *fecula granules*, and a *homogeneous fluid*, the latter forming the connecting medium of the individual cells. The *fecula* itself is a deposit of the superabundant

nutrient secretion of the plant; chiefly occurring in the developing (plastic) tissues of the germ, and the reproductive structures of the parent organism. Thus it greatly abounds in the tuber of the potato, the extremity of the pollen tube, and the embryo sac, both before and after fertilization. Raspail considers the starch granule an organized structure; a vesicle produced by, and existing within, the cells of the plant. Payen states, however, that the supposed vesicular membrane is only the concrete exterior of the endocellular gummy fluid; the starch granule, therefore, being structureless. However composed, the fecula granule is deposited in one of two modes, according to its destined purpose in the economy of the plant. If intended for its nourishment, it grows by absorption from without inwards (*qu. endosmose*), and is deposited slowly, forming concentric layers, the most fluid innermost.

On the other hand, deposited in cells about to assume the formative process, as those of the leaf, pollen, or albumen of the seed, it occurs as granules floating in the fluid contents of the cell; these granules being recognizable by the action of iodine (Schleiden). By whatever mode deposited, it is certain that the fecula granule consists of gum, enclosed within some kind of envelope; and equally so, that the metamorphose of fecula into gum, constituting the first essential step in the process of development, consists in the rupture of this envelope and the liberation of its contents. This rupture is effected by the chemico-vital action of the cell-wall on the surrounding fluid, whereby the latter is converted into a peculiar substance termed *diastase*. The rationale of the rupture of the fecula vesicle by diastase, most probably consists in the induction of some sudden change in the relative densities of the containing and contained fluids; being, therefore, of an endosmotic character.

But whatever the precise nature of the process, the property producing it has been designated, by Schwann, *metabolic force*; by Berzelius, *catalytic action*; a property common not only to organic, but some inorganic structures, consisting in the *power of one body to effect a chemical change in another, itself suffering no alteration*, as in the *etherification* of alcohol by *sulphuric*

acid; the decomposition of peroxide of hydrogen by deoxydizing agents, as fibrine, certain metals, &c. This property eminently belongs, as will presently be shown, to the primary cell (cytoblast) of the embryo (*germinal vesicle*); also to the cytoblasts of the various elementary tissues. A second change originating in the cytoblastema, pertaining therefore to this division of the subject, is the conversion of *gum* into *sugar*; the second step necessary to germination and the development of tissues.

This change may occur after one or two modes: first, by the combined action of heat and acids, on gum or lignin, to form diastase, whether obtaining naturally in the plant, or artificially in the laboratory; secondly, as constituting the essential vital process of the permanent cellular organisms—the lower tribes of algæ and fungi, for example—where the appropriation of carbon to the nourishment of the fungus gives rise not only to the saccharification of gum, but, by a still further abstraction of carbon, to the alcoholization of sugar.

The *first* may be termed a *positive* process, consisting in the direct supply of the vivifying agents, heat and acid (*qu. moisture*). In the *second* the same effect is produced *negatively*, by the abstraction of carbon. All the effects of the diastase, therefore, are producible, in the one case by a chemical, in the other by a vital decarbonization; and this substance, itself the product of the former process, becomes in its turn a powerful decarbonizing agent.

In phanerogamia the organic mucus consists of fecula granules, having acquired the gummy character previous to the commencement of cellular evolution. In progress of organization it becomes gradually expended, the residue forming the structureless epidermoid pellicle of the plant, and intercellular substance.

The clearest idea of the animal organic mucus will perhaps be derived from the consideration of the *ovarian ovule*. At the epoch of puberty we find this evolved, first, as a limpid fluid eliminated by the vascular ovarian stroma.

In this fluid are soon visible certain dark points, nucleoli (nuclear-corpuscles—*Schwann*). Of these the most definite and persistent is, with relation

to the ovule, the *germinal macula* or *spot*; but essentially a *nucleolus*, the earliest organized trace of a subsequent cellular economy. The limpid fluid agglutinates towards its surface, thus forming the *zona pellucida* of the mammalian—the *membrana vitelli* of the bird's ovum\*. The *nucleolus*, however, as the earliest appearance in the cytoblastema, is (according at least to the theory which considers the *female* the *germ-producing organ*) *potentially the new being*—a property, however, which appears to me to belong to the *zoospermic nucleolus* (the spermatozoa being developed on the same type as the ovule, though subsequently passing from the globular to the linear arrangement†). Embracing the former opinion, the *nucleolus* of the animal series is the analogue of the *utricle* of the *embryo sac* of the plant (Mirbel, Meyen, Brongniart). According to the latter view, it corresponds to the *plastic extremity of the pollen tube* (Schleiden, Wydler, Griffiths‡). In the animal, as

\* Vide my paper on this subject in *MED. GAZ.*, Nos. 4 and 5, Oct. 1841. The essential condition to the production of the primary vascular structures of the ovule is the *apposition of the cytoblastema with the vessels of the ovarian stroma*. This affords a particular instance of the universal developmental law of vascular tissues—all which are formed by the permeation of the cytoblastema by the nutrient *liquor sanguinis*—whereas non-vascular tissues are formed from the nutritive (elaborated) contents of the *cytoblast*.

† It may be objected to this—"Were each spermatozoon the germ of a new being, should not the spermatozoa and embryos observe, at all events, a *closer numerical correspondence*?" It can only be answered, that an analogous difficulty besets the opposite doctrine, there being a like quantitative disparity between the germs and Graafian vesicles.

‡ It is, I believe, pretty generally known, that the most eminent physiologists are at issue as to whether the germ of the new plant is supplied by the "*pollen grain*" or the "*embryo sac*;" one party contending that the pollen-tube becomes the embryo—the *anther*, therefore, being a *female organ*; another, that the new being is formed from the *embryo sac* or its *utricle*, the pollen tube exercising only a dynamic(?) influence. Touching this *questio verata*, be it observed that the pollen tube and embryo sac observe precisely the same order of development as the seminal fluid and ovarian ovule. The grand distinction, however, and which clearly consummates the analogy between the animal male fluid and the vegetable pollen grain, is the presence of the spermatozoa in the one, and the fovilla in the other.

Further, the peculiar structure and office of the tube clearly indicates it as the vegetable intro-mittent organ. The obliteration of the tube on the fulfilment of its function has also its analogy in certain animals: thus, in many insects (the *cantharis vesicatoria*, for example) we read, that after a fruitful coitus the male loses his penis, and shortly after dies. I am led to conclude, therefore, that, although in the complex cellular transformation which constitutes the early phases of development, experience is wanting to show

in the vegetable kingdom, the cytoblastema mostly abounds in the lower classes, especially the permanently globular organizations — polypi, infusoria, &c.—constituting their pabulum or source of nutrition. In those fungi which generate in decomposing and fermenting solutions, the nutrient process essentially consists in the abstraction of carbon from their organic nidus, the latter bearing to them the same relation as the *atmosphere* to the *superior* plants. Before quitting this subject, I would suggest that it seems not altogether improbable that the nutrition of the lower animals (as well as that of all plants) constitutes another source of atmospheric depuration. The remainder of the animal cytoblastema, after the evolution of the various tissues, constitutes the intercellular substance of cartilage and other structures. (Schleiden.)

2. *Of the Cytoblast.*—Sooner or later, around the already described small granules (nucleoli) of the cytoblastema appear larger granules, around which the former conglomerate. These larger

the part played by each respective element concerned in the process, analogy strongly favours the hypothesis of the germ-containing organ being in the one case the *male fluid*, in the other the *pollen tube*. As to the “*dynamical influence*” of the tube, the term appears to me a mere functional abstraction, akin to the “*aura seminalis*” of an earlier physiology.

I can, however, by no means coincide with Schleiden and others, that as the *anther* furnishes the germ, therefore the sexes of plants are misnamed: the *anther* being on that account a *female organ*. This would involve the preposterous admission that, as the testis secretes the semen, it is also a *female organ*; and therefore the sexes of animals are likewise misnamed—that *men*, in fact, are *women*; and *vice versa*, a *veritable anus mirabilis*, and most startling proposition, whereof the refutation rests with that form of logic termed the *reductio ad absurdum*. Why not rather admit in both cases the germ-containing organs to be the distinguishing attribute of virility, restricting the functions of the *ovule* in the one case, and *embryo-sac* in the other, to those of a nutritive and gestatory character? The *rationale* of the process of fecundation, so far as concerns the spermatozoa, consists in the assumption by the perfect organization of a lower animal of the rudimentary form of a higher one; the organized spermatozoon, complete in all its parts, acquiring, in consequence of its promotion under impregnation to a higher class in the animal series, the vesicular type common to the early development of the higher animals.

This would seem but the expression of a general physiological law, in virtue of which the *lower animals* rise in the scale of organization only by the exchange of their natural economies for the elementary forms of their *superiors*; and the deteriorated structures of the higher organisms regain their normality but by a descent in the scale of creation, acquiring the perfect forms of inferior entities.

granules are the cytoblasts (cell nuclei—*Schwann*.) Their source and mode of evolution has already been considered; the present remarks, therefore, will refer to their structure and vital properties or manifestations. They are later in appearance than the nucleoli: thus the germinal vesicle, the nucleus of the ovarian ovule, is a subsequent production to its nucleolus—the germinal spot—as R. Wagner and Martin Barry have verified by observations on the ova of insects.

In form the cytoblasts are oval, circular, or spheroidal; in colour yellowish white. Internally they consist of granules in various degrees of consistence. These characters are best verified on the persistent cytoblasts, as, in the articulated hairs of plants generally, the sap cells of characeæ; and in the animal kingdom, on the lymph-corpuscle, pus globule, &c.

So much for the structure of the cytoblast: its main vital properties or endowments are two—*plasticity* and *metabolism* (or metabolic force, from *τὸ μεταβολικόν*, that which is prone to cause or suffer change).

The operation of the former — as evidenced in the process of cellular evolution—has already been alluded to, consisting in the genesis from the cytoblast of the elementary or parent cell of the subsequent economy: this cell being in an adequate state of vital development to the maintenance of its own individuality and the reproduction of its kind. The cell itself is a product of the mature cytoblast. It appears as a minute vesicle which rapidly increases, the cytoblast maintaining its original dimensions; thus becoming at length but a mere speck attached to the cell-wall. The fully-developed cell consists of two laminæ, between which the cytoblast is enclosed. The coalition of isolated cells into a continuous structure constitutes the simplest type of development: the varieties of the cellular arrangement depending (especially in plants) on the amount of pressure to which they are subjected.

The standard form is a rhomboidal dodecahedron, giving rise to the hexagonal on a transverse section, as may be seen in the pith of plants.

In virtue of the “*metabolic force*” obtains the assimilative process of cellular life. It supplies nutritive material,



therefore, to the developing structures of the higher animals and plants: it constitutes the independent existence of the individual cells of multilocular organisms, as the higher algæ, fungi, &c. and forms the sole physiological property of the permanently globular or unilocular creations. Thus in the lower fungi, the protococcus, or snow plant, for example, each cell is a perfect organism; its integrity being preserved entirely by the metabolic power of the cell-wall over the materials of the surrounding nidus. In the yeast plant again (*torula cerevisiæ*), the same influence enables this humble but important fungus to decarbonize its organic habitat, converting the carbon to its own proper nutriment, and thus effecting the alcoholization of the sugar. Similar phenomena obtain in the lowest families of polygastric infusories. The most important instances of metabolic action evinced in the development of tissues consists in the conversion of *pyine* and *chondrine* into *gelatine*; the former characterizing the formation of cellular tissue; the latter of bone. Analogy warrants the conclusion that vegetable histogeny exhibits similar instances. In the higher animals the albumen of the blood represents the nidus of the lower ones. Now *albumen* contains three or four per cent. more carbon than *gelatine*, which is the principal component of the skin, and into which it is converted at the expense of its carbon (as in the plant is effected the conversion of gum into sugar): this process constituting, according to Dr. Prout, the source of the carbon of venous blood.

A third peculiar property of the cytoblast is its controlling and modifying influence over special circulation of the sap in plants; the currents of fluid within the cells always bearing a determinate relation to the cytoblast. Now under these circumstances the cytoblast is the analogue, both in structure and position, of the animal *blood corpuscle*—itself a cytoblast. The question, therefore, arises, whether the latter may not be similarly related to the circulating fluid. Schultz has also ascertained that the *organic contractility* of the membrane of the blood-vesicle—the essential property to the formation of the *plasma* (*liquor sanguinis*)—depends

on the *nucleus* or cytoblast. “The *organic contractility* of the wall of the vesicle,” observes this distinguished physiologist, “is in direct ratio to the elaboration of the *nuclei*; and when the latter are absorbed, the contractile power of the vesicle is entirely lost.” The intimate nature of the *modus operandi* is in either case but little understood. The various forces of molecular movement, hygroscopicity, endomose, and exomose, (vide Rees and Lanein, Guy’s Hospital Reports, No. 4), and vital affinity, have been severally taxed with the office. But if we may say *causa latet*, we may also add *notissima est*: its effect is palpable and undoubted; it regulates the intestine motion of the blood globules, maintains them, by its repulsive influence, at proper distances from each other, and thus is the cause of the fluidity of the blood†.

Proceed we now to the second topic of consideration—the *leading modifications of the cellular type*, as exhibited—  
a—in the formation of organic tissues;  
b—under certain pathological conditions.

A. Of the leading modifications of the cellular type as exhibited in the formation of organic tissues.—Although animal development observe for the most part a more complex order than that of plants, it is evident that a like structural simplicity pervades the early history of both. In claiming identity of origin for the two natural kingdoms, be it remarked that their component structures differ less in physical character than either in *function* or *position*. The strict physiological attribute of a *tissue* is a *property*—of an *organ*, a *function*, and it is in respect of complexity, not of *tissue* or *type*, but of *organ* or *modification*, giving rise to a far more elaborate anatomy and phy-

\* The *contractility* and *colouring matter* of the blood observe, it would seem, an *inverse ratio*: hence the deeper tint of the blood in age, from the diminution of contractility of the *faculty of absorbing oxygen*, and rejecting carbonic acid.

† The erudite and truly philosophical Dr. Copland attributes the special circulation of animals to the influence exerted by the *ganglial nerves* on the interior of the blood-vessels. Besides which *force of mutual repulsion*, he also mentions another force exerted at the point of contact of the blood-globules and the solids, of which the effect is to bring the blood within the sphere of vitality of the different structures, that each one may attract from it its formative materials which are always present in healthy blood (Vide Copland’s *Dic. of Prac. Med.* art. *Blood*.)



siology, that we behold the superiority of animals in the organized scale. It were needless here to enter in detail upon the comparative difference of position between animal and vegetable organs. Suffice it to say that they mainly depend on the position of the *system of organic life* with respect to the *axis* (*skeleton*, or trunk), the organic system or axial appendages of the plant occupying the position of the external relation system of the animal; situated, that is, *without* the axis. How far this doctrine of the simplicity or unity of organization is confirmed by the structure of the elementary tissues, a comparison of these tissues will best demonstrate. To this end I shall endeavour, first, to present a comparative view of the mode of development of organic structures; secondly, to review the vital properties of the economies to which these structures give rise.

1. *The mode of development of organic structures.*—The ultimate organic structures are *membrane* and *fibre*; the former pretty generally affecting the *globular*, the latter the *linear* form. Of these structures, the earliest vital economy, whether as individual existences, or component molecules of higher organisms, is, of the former a *cell*, of the latter a *tube*.

The *globular* or *cellular*, and the *tubular* or *fibrous* economies, constitute, therefore, the bases of the organic superstructure. The cellular system, both in plants and animals, more immediately subserves the system of organic life; in other words, all those vital actions neither arising from, nor necessarily attended by, *perception* on the part of the individual, nor any appreciable change of its mode of existence; these actions being either of a *nutrient* or an *excited* (irritocontractile) nature.

*Cellular* tissue is universally diffused throughout organic bodies; and its numerous modifications originate the woody and vascular tissues of plants, and the various membranes, the tegumentary included, of animals.

Its general properties are very similar in both kingdoms of nature. It is soft, homogeneous, colourless, permeable to fluids, though without visible pores, remarkably extensile, and self-productive—properties best determined in the

simplest forms of cellular tissue, as the cells of the dorsal cord of the embryo, the epithelial and adipose cells of the animal, and the membranous cellular tissue of the plant.

*Fibrous* tissue more especially subserves the system of external relation, those vital actions in all cases presupposing perception on the part of the individual, and accompanied by a visible change in its mode of existence. They are, for the most part of a locomotive character; principally restricted, therefore, to the animal creation.

It may be affirmed therefore, in round terms, that the prevailing texture of animals is the *tubular*; of plants, the *globular* or *cellular*\*. And although *fibre* is recognized as a distinct vegetable element, it always pre-exists as a *cell*, of which the gradual transformation into a *tube* gives rise to the various forms of woody and vascular tissue; this change being effected either by the *fibrification* of the cell itself or its internal deposit. The former process most probably applies to the formation of woody tissue; where we find simply a tube, with no trace of an enclosed fibre, the latter constituting the development of the vascular organs; where the cell constitutes part of the persistent economy—spiral vessels, and certain forms of ducts, consisting, as is well known, of a fibre spirally developed within a cell. But that the endocellular deposit itself—the subsequent fibre—occurs in the vesicular form, has been proved by *Miibel*, who, in the *Marchantia Polymorpha*, witnessed the entire evolution of bladders into tubes, spiral vessels, and annular ducts. The unequal growth of the cell and contained fibre gives rise to the reticulated form of duct; and according to Schleiden, Slack, and Bischoff, to the dotted duct also; although the latter or *vasiform* tissue is regarded by Dr. Lindley as a form of cellular tissue, its walls marked by peculiar granules. Had vasiform tissue, according to this distinguished botanist, been caused either by the breaking up of a fibre from the disproportionate growth of the cell-wall (Slack), or its own spontaneous dismemberment (Bischoff), the cells must have terminated conically

\* Dr. Hodgkin (amongst other celebrated physiologists) maintains that the structure of the primitive animal tissues is fibrous.

rather than abruptly. The tissue, therefore, would have affected the pro-senchymatous or tapering, rather than the parenchymatous or cylindrical form. The cellular is, therefore, the parent structure of organized bodies; for, as will presently appear, animal tissues are developed on precisely the same principle, though infinitely more complex and diversified in its modifications.

Perhaps the best-marked instances of pure fibrous structure in the plant are found in the lining membrane of the anther (Purkinje), and the seed-coat of *Collomia Linearis* (Lindley), where the productive cell disappears, fibre alone remaining.

Physiologists recognize two kinds of animal fibre—the nervous and the muscular.

These three tissues, therefore—the cellular, the nervous, and the muscular—variously combined and modified, originate the various sub-systems; to wit, the vascular, the osseous, the fibrous (tendon and ligament), the cartilaginous, and the horny or epithelial.

[To be continued.]

## ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.

(For the Medical Gazette.)

[Continued from p. 605.]

OTHER pathologists, besides Sir Charles Bell, have attributed the external affection to irritation of the ganglionic centres; but it is even at the present day a disputed point whether or not the great sympathetic nerve, being exclusively devoted to the functions of organic life, is capable of conveying morbid impressions to a remote external seat. In order, therefore, to elucidate the subject, it will be necessary to take a brief survey of the anatomy of this nerve, and to collect a few of the evidences regarding its influence, in support of the affirmative proposition.

The great sympathetic nerve has a vast connexion with all the other nerves of the body. It is, in fact, an entire system of nerves, characterised by peculiarities which distinguish it from those which arise from the brain and spinal marrow. It extends from

the cranium to the pelvis, lying along the vertebral column; and presents a chain of ganglia connected by nerve filaments.

The sympathetic nerves are symmetrical, and, from their direct communications, are generally represented as taking their origin from the sixth pair, or *motores externi*, and from the first, or ophthalmic division, and various branch of the fifth. Each nerve consists of three cervical, twelve dorsal, five lumbar, and four sacral ganglia with their cords of connexion. Three small ganglia are also situated in the cranium; namely, the lenticular in the orbit, the sphenopalatine, or the ganglion of Meckel, and a small one is the branch of communication between the anterior and cerebral arteries, designated the naso-palatine.

From the anterior border of the lenticular ganglion, filaments issue which proceed forwards to the surface of the sclerotica, namely, the ciliary nerves; and others pass inwards, and ramify in the iris. From the posterior surface of the ganglion arise two branches, of which one passes to the nasal division of the ophthalmic nerve, and proceeds to the carotid plexus; the other to the inferior oblique branch of the third pair, or *motores oculorum*.

The sphenopalatine, or Meckel's ganglion, lies in the pterygo-maxillary fossa, and forms by its branches the palatine nerve: filaments also ramify in the pituitary membrane, the soft structures of the palate and gums, the nasal fossa, the spongy bones, and septum narium, and terminate in the naso-palatine ganglion. This ganglion gives off filaments to the membrane of the palate, the carotid plexus, the middle cavity of the ear, constituting the *corda tympani*, the gustatory nerve, and submaxillary gland, where it terminates in a sort of plexus.

The superior, or great cervical ganglion, extends from the base of the cranium to the transverse process of the third cervical vertebra. From it branches proceed in every possible direction, communicating with the sixth nerve in the cavernous sinus, and extending along the carotid artery to the minute ganglion on the arterial communicans. One filament ascends to the nasal branch of the ophthalmic nerve, which is prolonged to the len-

ticular ganglion; and another communicates with the vidian nerve. Branches also pass to the superior cervical nerves, and to the pharynx, where they contribute to the pharyngeal plexus, communicate with the vagus, glosso-pharyngeal, lingual, facial, and fifth pair of nerves; and others passing forward to the carotid artery, accompany its various ramifications. The other, descending, unites its branches with the *superficialis cordis*.

The middle cervical ganglion communicates with the superior and inferior cervical ganglia, sends branches to the cervical nerves, the thyroid glands, and joins the recurrent. From its interior portion the middle cardiac nerve issues.

The inferior cervical ganglion receives the communicating branch of the middle ganglion, and sends down five or six nerves, which, passing before and behind the subclavian artery, end in the superior thoracic ganglion. Branches also pass outwards, and join the spinal nerves that form the plexus: others pass inwards, and contribute to the pulmonary plexus. Its anterior branch forms the inferior cardiac nerve.

The thoracic portion of the sympathetic comprises—first, a series of ganglia which are regularly disposed along the heads of the ribs, connected by nervous cords passing from one to the other; and, secondly, the plexus formed along the median line, for the supply of the heart and lungs.

The cardiac plexus is the common point of union of the cardiac nerves that issue from the cervical ganglia, and is the immediate source whence the different nerves proceed to supply the heart. From this plexus some filaments pass to join the pulmonary plexus, and others turn forwards to the aorta. The descending set passes to the heart, where it divides, the branches take the course of the coronary arteries, and form the coronary plexus. From this plexus, branches then proceed to the heart, ramify upon the right and left auricle and ventricle, and eventually penetrate its muscular texture.

The cardiac plexus receives the cardiac nerves of each side, and branches from the vagus and recurrent.

Each of the thoracic ganglia is a centre from which branches of communication proceed upwards to the

ganglion above, and downward to that below it, thus connecting the series: and filaments pass also from each to the contiguous intercostal nerve, so as to connect the nerves of organic with those of animal life.

The internal branches from the first five ganglia pass towards the middle line, some to the trachea, which end in the pulmonary plexus, whilst others ramify in the œsophagus and aorta. The anterior branches unite to form the *splanchnicus major*, and terminate in the semilunar ganglion. Filaments from the tenth and eleventh thoracic ganglia unite to form the lesser splanchnic, which finally terminate in the renal plexus.

The semilunar ganglia in the abdomen are of considerable size, and form the centre of the ganglionic system. They are seated on the base of the crura of the diaphragm, at each side of the celiac axis. From their circumference proceed a great number of branches, which form an extensive and intricate interlacement called the solar or celiac plexus. From this plexus filaments pass to each of the chylopoietic viscera. Thus numerous branches pass to the liver, constituting the hepatic plexus: those proceeding to the stomach, form the coronary plexus: those to the spleen, the splenic plexus, and those which lie in the folds of the mesentery, the mesenteric plexus, from which branches are sent which accompany the inferior mesenteric artery. The renal plexus is derived from the lesser splanchnic, and branches from the solar plexus, from which again the spermatic plexus takes its origin.

The lumbar ganglia send branches which ramify round the aorta, and some communicate with the lumbar nerves.

From the interlacement of the ganglia of the sympathetic in the pelvis, the pelvic viscera receive an abundant supply of nerves, the filaments of which form intimate connections with the sacral nerves.

Thus we perceive that the sympathetic nerve is an entire system of nerves, which is distributed abundantly to the viscera of the thorax, abdomen, and pelvis, and extends universally by joining the other nerves of the head and extremities. The point, in relation to the present subject, is essentially

important to be borne in mind—that it maintains a direct communication with the fifth, whose ramifying branches are distributed universally to the face.

The older anatomists described the sympathetic as arising from the fifth and sixth pairs of nerves; but subsequent researches have proved this view of its origin to be too limited; and it is now generally admitted that it has innumerable origins, and an universal connection with the other nerves of the body. "Many of the viscera to which it is distributed are entirely independent of the will, and have functions to perform too essential to life to be left under the influence of the will. The sympathetic nerve is thus, as it were, a system within itself, having operations to perform of which the mind is not conscious; whilst it occasions, both in health and disease, sympathetic affections not easily traced\*."

Mason Good, in his "Physiological Proem" on Neurotica, says, "There is one part, however, of the nervous system, in the more perfect animals, that is particularly worthy of our attention, as furnishing a rule peculiar to itself, and being without a parallel in any other part; and that is, the origin, structure, and extensive influence of the great sympathetic, or intercostal nerve, which forms a kind of system in itself—an epicycle within the two cycles of cerebral and vertebral influence. It is connected with the brain and spinal marrow, may be said to arise from either, and is studded in its course with ganglions or medullary enlargements. Thus equally enriched with the nervous stores of the brain and spinal marrow, it sends off radiations to all the organs of the thoracic, abdominal, and hypogastric regions; to the lungs, heart, stomach, and intestines; the bladder, uterus, and testes; and thus becomes an emporium of nervous commerce, and an instrument of general sympathy. To this is owing that nice fellowship of feeling which certain organs exhibit, and which often surprises us."

The functional offices of the ganglia have given rise to a diversity of theories. The term ganglion is found in Galen and Celsus, employed to describe certain hard tumors seated in the ligaments and tendons. The ganglia of

the sympathetic were first described by Fallopius, and were supposed by him and the earlier writers to give firmness to the nerves. Lascani imagined them to be muscles *sui generis*, and, like other muscular textures, to be capable of contraction. This was disputed by Haller, who was unable to discover muscular fibres in their composition. He considered the uses of the ganglia to be utterly unknown.

Winslow regarded the ganglia, especially those of the spinal nerves, to be so many dispersed origins of the great sympathetic; and although he does not attempt an explanation of their uses, he inclines to the belief that they are so many subsidiary brains. This conjecture was favourably entertained by Winterl, Johnstone, Unger, Leca, and Pessinger.

Monro, in his "Treatise on the Nerves," sums up these different hypotheses. "Some have thought," he says, "the ganglia of nerves to be glandular: others, from their firm texture, suppose them to be muscular, and serve to accelerate the motions of the liquor in the nerves which proceed from them; but as no proof is offered for either of these opinions, they cannot be maintained. Others would make them serve—first, to divide a small nerve into many nerves, and by these means to increase the number of nervous branches; secondly, to make nerves come conveniently by different directions to the parts to which they belong; thirdly, to reunite several small nervous fibres into one large nerve. Since no proof is adduced that these three things cannot be done without the interposition of a ganglion, but, on the contrary, we see them performed where there is no ganglion, we must continue to acknowledge ignorance concerning the uses of these small knots the ganglions."

Monro, Filius, in a work published in 1783, on the "Structure and Functions of the Nervous System," says, "These complications of the nerves being invariably destined for particular parts, this general uniformity in connection and distribution must answer some purpose superior to mere mechanical contrivance." John Hunter maintained the same opinion; but neither of them stated their views of that particular purpose.

\* Bell's Surgery.



Professor Prochaska considers the ganglia as knots or ligatures, so tight as to intercept all communication between the heart and sensorium commune, in the calm and peaceful state of the system, but not sufficiently so as to prevent the sensorium reacting more or less powerfully on the heart in the agitation of the passions.

M. Percy, losing sight even of this slight indication of function, in a report made to the class of Physical and Mathematical Sciences of the Institute of France, on the work of M. Le Gallois, entitled "*Expériences sur le Principe de la Vie, notamment sur celui des Mouvements du Cœur, et sur le Siège de ce Principe*," arrives at the conclusion, from the experiments of the author, that the great sympathetic takes its rise from the spinal marrow, and that the peculiar character of that nerve is to bring every part to which it is distributed under the immediate influence of the whole nervous system.

Bichat maintains the existence of an animal and an organic life distinct from each other, and of a nervous system for each of those lives. Profiting by the idea of Winslow, he regards the system of the ganglia as small brains, which belong to organic life, and the system of the brain to animal life. Both the idea borrowed from Winslow, and the distinction of these two nervous systems, are highly important; but the terms are not sufficiently explicit, all parts of the human body being at once organic and animal.

Müller's discoveries, the correctness of which has been corroborated by Ehrenberg, show that the ganglia of the intercostal are of themselves sources of nervous energy, and that the nerve has intermixed with it, throughout its course, sensitive and motor filaments from the cerebro-spinal system. Dr. Wilson Philip maintains the same position; and states the ganglia and plexuses to be the means of combining the influence of the brain and spinal marrow, and of distributing this combined influence to every part of the system. It appears also, from the anatomical researches of Mr. Mayo\*, that nerves of motion are bound up with ganglionic nerves in the same investing sheath.

Now the controverted pathological question returns upon us, "whether or not the sympathetic, being a nerve devoted to the functions of organic life, is capable of conveying morbid impressions to a remote external seat?"

It is owing, I suppose, to the obscurity which still hangs over the functions of the ganglionic system, that writers of every grade and denomination are induced to adhere to the mysterious doctrine of *sympathy*, to account for many unexplained phenomena. Authors, balancing the probabilities with so nice a hand, have divided sympathy into that of association and the sympathy of equilibrium; and disorders have been assigned to each variety, many of which might, with a better grace, have been attributed to direct irritation. Thus the sympathy of equilibrium is said to produce pain in the testicle from inflammation of the urethra, and dyspepsia and vomiting to arise from nephritis and inflammatory affections of the womb; and so forth.

I have stated elsewhere, more at length, the opinion of a modern pathologist on this subject\*, in the general correctness of which I quite coincide. He says that much which is erroneous is involved in the common doctrine of the great sympathetic nerve. In the explanation of phenomena, there is no need of assuming the mysterious notion of sympathy, as the ganglionic system is regulated by the same general law as the rest of the nervous system, its derangements being always referred to its extremities or sentient origins: that there is nothing more wonderful in the ganglia, or central parts of that system, being insensible, than there is in the brain, or central parts of the higher nervous system, being so; that pain, referred to its extremities, is the peculiar expression of derangement in the ganglionic system, which has nothing to do with touch or any other sense, as it gives no cognizance of forms, &c.; that among many proofs of pain being an expression of the ganglionic system, none is more remarkable than that furnished by this very affection, namely, that while it lasts, the pain produced by it is universally acknowledged to be infinitely more severe than that caused

\* Mayo's Outlines of Human Physiology.

\* See my work on Tic Douloureux, p. 51.



by any disease of the fifth pair itself, while the function of the fifth nerve is absolutely unaffected, and the relief in the interval of the paroxysms is perfect; that for the reasons assigned above, derangements of the sympathetic connected with the primæ viæ are naturally referred to its first filaments arising on what may be deemed the commencement of the primæ viæ, the cavities of the mouth and nose; that as these filaments there accompany the fifth pair, serving for vital sensation and involuntary motion, as Bellingeri has proved, many of its derangements are referred to the branches of the fifth pair, and hence we ascribe to them *tic douloureux*.

[To be continued.]

## ON MEDICAL REFORM;

CONTAINING

*Suggestions to the Legislature for improving the Medical Profession.*

BY JAMES M'CABE, M.D.

(For the London Medical Gazette.)

THE question of medical reform appears at present a good deal to interest the public, and from the permission which has recently been given in the House of Commons to Mr. Warburton and Mr. Hawes, to bring in a bill to regulate the medical profession, it is likely ere long to occupy the attention of the legislature. When subjects connected with divinity or law are brought under the consideration of the legislature, members of these professions are present in one or both houses of parliament to explain whatever requires explanation, and to protect if necessary the interests, and support the respectability, of their respective professions. Not so the medical profession: from the nature of its duties, and the uncertainty of its calls, the members of it are debarred from legislative functions, and thus a profession, of which the public know infinitely less than they do of divinity or law, is left to be regulated by a body of legislators wholly or nearly unacquainted with the subject.

That this is no harsh judgment on our legislators with regard to the art and science of medicine, we may refer to the public press, which every day abounds with advertisements bearing testimony to the medical virtues and efficacy of the most discordant remedies, and recounting the most incredible cures performed by illiterate and uneducated persons,—and all this vouched for and

attested by the signatures of noble lords, right reverend bishops, and other grave legislators. Indeed, when has any person, supremely ignorant of medical science, attempted to impose on the public by pretension and quackery, who has not met with support and patronage from those who constitute the grand council of the nation? Who, but our legislators, gave to Mr. St. Long his short-lived reputation, and enabled him, by their patronage and support, to find victims on whom to practise with impunity and profit! With these facts before them, as notorious and as well authenticated as any act of the legislature itself, what hopes can the members of the medical profession entertain that their position in society will be improved, or their interests protected, by any legislative enactment?

It may be said, however, that this disposition on the part of legislators to patronize quackery and pretension rather than real science, is merely in their private or individual capacities, and that, although separately or individually they may lack wisdom, or even err more than ordinary mortals, in their legislative capacity they are sure to do justice. There may be something in this, and we hope there is, but to enable them to do justice to a subject with which they are so little conversant, it is the duty of the members of the medical profession to place before them, through the medium of the press, all the information which they can impart, that is necessary to guide their counsels.

The present movement of dissatisfaction in the medical profession probably arises from causes which legislation cannot remedy or remove. The members of it are more numerous than the wants of the public require; consequently there is great competition among themselves, which leads some of its members to have recourse to intrigues and manœuvres calculated to lower the standard of respectability of the profession in the estimation of the public. What is easily obtained is held cheap, and thought to be of little value; and as medical men, when they lay themselves out for practice, cannot attend to other pursuits, which might take them out of the way of it, rather than be idle they prescribe for nothing, and for any body and every body who asks them. This, combined with a philanthropic turn of mind, to which we believe medical studies and medical pursuits dispose those engaged in them, induces medical men to take a leading and distinguished part in all those public institutions which are known as medical charities, and the essential principle of which consists in medical men giving to the poor their professional aid without fee or reward. It seldom happens, however, that

Medical men connected with public institutions derive any advantage from them, besides the pleasure of benefiting the poor; for the very persons who subscribe to such charities, and who applaud the disinterestedness of the medical officers, too often, when they are ill themselves, and require medical advice, employ others, who seem at least to set a greater value on their time and labour than the medical officers of their own institutions.

The financial and commercial difficulties or crises of the country, which occur from time to time, also operate injuriously on the medical profession, particularly on that part of it who are accustomed to be remunerated by immediate fees. When money is scarce, a man postpones every thing that requires immediate payment, and therefore, instead of sending for a physician, a patient will frequently be satisfied with a general practitioner, who, at a period yet remote, sends in his account for payment. When the value of money was perhaps ten times what it now is, the fee of a physician was a guinea; but even that fee, reduced in value as it is, by the changes of the currency and circumstances of the times, is now grudgingly given, because the general practitioner charges less, and payment is deferred to a subsequent period. Another source of dissatisfaction in the medical profession is its want of connexion with the state. Divinity and law contain some great prizes, which, although a few only can obtain, all the members of them may aspire to; but medicine, although requiring perhaps a greater outlay of capital than either, and certainly a more arduous and diversified course of studies, has no such prizes, and in this country never leads to that high rank and fortune which the other learned professions frequently lead to, from their connection with the state and government.

These causes of dissatisfaction perhaps the legislature can neither remedy nor remove, but a knowledge of their existence is necessary for any one who undertakes medical legislation. They will show the great difficulties that surround the subject; for as they apply to every department of the profession, the problem to be solved by the legislature is one difficult of solution,—that is, to devise any legislative enactment that shall do justice to all parties.

The first question for consideration is the order of arrangement of the profession; whether it shall consist of one faculty only, as is recommended by a large majority of medical reformers, or whether it shall continue, as it now is, divided into the two departments of medicine and surgery. Public utility, rather than the opinion of the medical faculty, should guide the legislature in this

matter. It is of the greatest importance to the public to have the most effectual aid whenever medical advice or surgical assistance is required: and the question for consideration is, can a man excel, or ought a man to be expected to excel, in both departments. “*Non omnia possumus omnes*” is a maxim very generally admitted, and practically admitted even in the department of surgery. We find that one surgeon is expert in operations on the eye; another on the ear; another is supposed to excel in the treatment of distortions and other diseases of the spine, being supposed to have paid particular attention to these diseases. Such being the case, is it wise or prudent for the legislature to decree one faculty only, or one order of practitioners, when they find that even the department of surgery is practically so subdivided?

The universities, which, as the name implies, are supposed to teach all things necessary, confer on their graduates a plenitude of authority with regard to literature and the learned professions. The medical degree confers the privilege of teaching and practising the art of medicine “*ubique gentium*.” This being the case, can any thing be more repugnant to reason and common sense than that the graduates of universities should, notwithstanding, be subjected to the interested control of medical corporations? Had this plenitude of privilege conferred by university degrees been allowed to remain unshackled, the present movement of dissatisfaction in the medical profession would probably never have taken place. It is difficult for sovereigns to confer charters of incorporation on any bodies, without trenching on or encroaching on the privileges of others to whom charters have been already granted; and the charter of incorporation by which the London College of Physicians was instituted, certainly trenched on the privileges of the universities, although such was not the object or intention with which the charter was granted. The charter was granted to the physicians at the time practising in London, without any limitation or reservation in favour of any particular universities. In fact, it was a mode of registering regularly educated medical graduates, that the public might be thereby enabled to know in whom they might place confidence when they required the aid of a physician.

Had the College of Physicians faithfully performed their trust, and faithfully interpreted the intention of the charter, by making their College what it ought to be—a court of record, in which to register the names of all regularly-educated physicians who chose to enrol their names there, on the payment of a small registration fee, the respectability of the profession would have

been sustained and increased, and quackery would have been prevented, or, at least, diminished; for as there would have been no scarcity of regularly-educated physicians, there would have been no temptation to the public to employ illiterate advertisers.

Instead, however, of doing what no doubt was the intention of the sovereigns and legislatures by which the charter was granted and confirmed to the College, the members of it set about to convert it to their own private gain and emolument, by passing from time to time the most iniquitous bye-laws. By these laws they kept the fellowship of the College, that is, the highest rank among its members, and all places of consideration and emolument in the College, or under its influence, among the graduates of Oxford and Cambridge, to the exclusion of all other Universities; and, by assuming, under the presumed sanction of the charter, the power of re-examining all graduates who wished to practise in London, by making that examination troublesome and expensive, and by throwing as many other difficulties in the way of physicians wishing to practise in the metropolis as the greatest ingenuity could devise, they endeavoured to establish for themselves a monopoly of the London practice. In this they succeeded for some years; but as every abuse is sure to bring about a remedy, or at least some means by which it may be evaded, so has this ingenious device of the London College of Physicians not only suggested a remedy to the public, but has become the cause of the present embarrassments of the College. The supply of physicians in London not being sufficient for the wants of the public, the general practitioners obtained an act, in 1815, which virtually enabled them to act as physicians in the same way as if they were in possession of regular University degrees; and the members of the College of Surgeons, although little acquainted with medicine, and hitherto calling themselves pure surgeons, were not slow to avail themselves of the blunders of the College of Physicians, and, turning their attention from surgical to medical diseases, began to discover that surgical skill and frequent surgical operations were not the only road to fame and fortune. Mr. Lawrence states, in his Surgical Lectures, that not half the number of operations are now performed in St. Bartholomew's Hospital, in proportion to the numbers treated, that were performed in that hospital some thirty years ago; which, being interpreted, means, that some thirty years ago, half the number of operations in St. Bartholomew's Hospital were unnecessarily performed, and that many limbs, and perhaps lives, may have been sacrificed, in that and the other great London hospitals, to the establishment of surgical reputations.

To remedy these abuses, it is necessary for the legislature to recur to first principles, that is, to re-establish the power of the Universities, and the sufficiency of their degrees for the practice of the medical profession in all its departments, without let or hindrance from any of the existing medical corporations. "*Omne majus continet in se minus*"—the greater contains the lesser, is the principle on which medicine is taught in universities: no one can obtain a degree in medicine in any regular university without having acquired a sufficient knowledge of surgery and pharmacy to enable him to practise these departments of the profession should circumstances induce him, or the "*res angusta domi*" oblige him, to practise either the one or the other; and surely he is better qualified to practise either than a person who has received only an inferior education, and ought not to be obliged to seek, from a corporation of surgeons, or a company of apothecaries, a license to exercise faculties which have been conferred upon him without limitation in his university degree.

By thus affirming the power of the Universities, the legislature would secure to the country a sufficient supply of properly educated medical practitioners. To obtain practice as a physician requires perhaps a good connexion, besides time and capital, and those who do not succeed in obtaining it might fall back upon surgery or pharmacy, according to their respective tastes or necessities. In France, a degree is conferred in surgery as well as in medicine, and this example might be advantageously followed in the British and Irish universities, and the *Senatus Academicus* might judge and decide, from the examination of candidates, whether their acquirements, and the particular bent of their studies, would entitle them to the medical or the surgical degree. Something similar to this obtains in the examination of candidates for the Engineer and Artillery service of the British army. The course of studies at Woolwich is the same for both departments, and at the examination only is it determined to which department of the service the candidate shall be assigned. The analogy of course is not perfect between the medical profession and the science of projectiles and war; the latter teaching the most expeditious means of arresting human life, the former endeavouring to extend the span of human existence—"Fas est ab hoste doceri;"—and the method followed at Woolwich of examining and deciding upon the merits and capabilities of candidates is, even to a peaceable profession, worthy of all imitation.

Having re-established the power and privileges of the universities, the next step for the legislature will be to establish a general

system of registration. To legislate directly against quacks and quackery by stringent laws and penal enactments would probably fail, even if attempted, as any thing bearing the semblance of individual persecution would be sure to excite public sympathy and public indignation. Besides, John Bull would think it an infringement on his own rights and personal liberty were he restrained from doing himself a personal injury, by employing, should he wish it, an unauthorized person. All, perhaps, that can be done by law is to cause a general registration of all who are qualified to practise, leaving the rest to the discretion of the public, who are generally sharp-sighted enough to see their own interests, and to consult their own personal safety, when not blinded by prejudice or compulsory enactments.

With regard to the best mode of conducting a general registration, a little practical knowledge and observation of the working of it, when once brought into operation, will be necessary to perfect its details. The more simply and economically it is conducted, the better. Offices for registration might be established in the metropolis, and in all the principal towns of the kingdom, in which practitioners might enrol their names and diplomas, or other legal qualifications, choosing for their places of registration the districts or localities in which they intended to practise. For this first registration a small fee might be charged; but should the practitioner afterwards remove to another district or locality, there ought to be no additional fee for transferring his name from one register to another; otherwise he would be placed in a worse position than his fellow subjects, as his choice of a residence would be restrained by taxation. Perhaps the present medical corporations might be made available for the purposes of registration, by converting them into courts of record for the enrolment of all medical practitioners; and that the registration offices throughout the country might be branches of the same establishments, and supported by the funds of the metropolitan corporations. We have said at the beginning of this article that the nature of a medical man's duties, when engaged in the practice of his profession, renders it difficult for him to attend to other pursuits, and in a great measure disqualifies him for being the representative in parliament of any parliamentary constituency. This objection is so great, and so general in its application, that we think it must be fatal to all the plans of medical reform that have been recently brought forward on the basis of representation. Mr. Warburton's bill proposes a registration of all medical men that are qualified to practise by the law as it at present stands. That, when so registered,

they shall choose representatives from among themselves, who again shall select from their own body a governing senate. It is evident that this plan is modelled on the parliamentary system of representation, and, true to its constitutional prototype, it was to be accompanied by taxation. The objection already stated would be fatal to the plan, but there are besides many other and insurmountable objections. In the first place, the expenses of working out the bill were to be defrayed by an annual tax on the members of the profession. None of the other learned professions—indeed no British subject—is subjected to such a tax. How would a briefless barrister, or a clergyman without curacy or cure of souls, relish the imposition of such a capitation tax, even although they were assured that it would be faithfully applied—to increase the revenue of the Lord Chancellor or the Archbishop of Canterbury, to both which appointments they were at full liberty to aspire? Another objection to the representative system is, that the choice would be likely to fall on those members of the profession who are the most engaged in practice, and unless to serve, when elected, were made compulsory by law, a large salary would be necessary to induce them to accept the office, and to absent themselves from their patients while engaged in the business of medical legislation. If the salary were a large and liberal one, befitting a liberal profession, it would probably lead to jealousies and intrigues, and the elections, like other elections which we need not name, might lead to bribery and corruption. By Mr. Warburton's bill the representatives were to be chosen by ballot, but were not, like their parliamentary prototypes, to represent localities, or districts of country, but the whole profession. The practical result of this plan would be, that almost all the representatives would be chosen from the metropolitan cities, and perhaps a few of the larger and more populous towns, as the numbers condensed in these places would enable them to nominate each other; and all that would remain to the electors in the rural districts and smaller towns would be the obligation of complying with the compulsory clauses of the bill, for the payment of the salaries of the successful candidates.

The objections here stated will equally apply to Mr. Hawes's intended bill, and to all the suggestions and proposals of Mr. Wakley, and the British Medical Association, as all these proposed plans are founded on the basis of representation, election, and self-government.

With regard to the one faculty which is advocated by Mr. Wakley and other reformers, the plan here proposed may be considered as identical. If the Universities



were to confer degrees in surgery as well as in medicine, two orders would certainly still exist in the profession; but as medicine necessarily includes surgery, the authority by which both degrees would be conferred might with propriety be called the Faculty of Medicine.

But although a university education is the best basis on which to raise a superstructure in medicine and surgery, and although the degree conferred by a university is the best educational test of a man's fitness to practise either department of the profession, alone it is not sufficient; practice and observation are also necessary. In all professions, after the foundation has been properly laid by education, a man must further educate himself. This shews the utility, and indeed the necessity, of subdivision, as a man can only be expected to excel in that to which he most diligently applies himself; and no man who attempts to embrace in practice all the departments of medicine and surgery will ever excel in either. What has been stated respecting the unnecessary performance of surgical operations in St. Bartholomew's Hospital, and which probably applied equally well, at the time, to the other London hospitals, shews that it is the interest of the public, as well as the duty of the profession, to continue the two orders of physicians and surgeons. That a fondness for surgical operations may not occasion their unnecessary performance, no operation ought to be performed in a public hospital without its necessity being decided upon at a consultation of physicians and surgeons. Were this rule regularly enforced in public hospitals, the practice of it would soon obtain in private practice, and the public would be saved from the effects of that morbid fondness for surgical operations which it appears was at one time epidemic in the London hospitals.

If the public safety requires the two orders of physicians and surgeons, for the secure practice of the medical profession, it also requires another order, to prepare medicines and compound prescriptions. If the same person prescribes and afterwards compounds his own prescription, the public have not a sufficient security against the possibility of moral depravity, or the more probable occurrence of unintentional mistake. The most careful physician may make a mistake in writing a prescription, which the person who prepares it will readily perceive, and thus prevent any possible injury resulting to a patient from unintentional error in the exhibition of dangerous remedies. It is clear that the person to whom this important trust is confided ought to be properly qualified; he ought not only to be able to read prescriptions with correctness and facility,

but he ought also to be acquainted with the nature and composition of medicines and medicinal agents, their doses, and their effects on the human body: in a word, he ought to be acquainted with chemistry and pharmacy; and no person who is not acquainted with these important branches of science ought to be permitted to prepare medicines or compound prescriptions. In Louvain, and some other foreign universities, degrees are conferred in pharmacy: a degree in pharmacy would certainly be the best educational test of a person's qualification, but at all events an examination before a competent tribunal recognised by law is absolutely necessary for public security.

It will be said that the plan here recommended is merely a remodelling or reform of the old system of physician, surgeon, and apothecary. Such is the fact. That system grew up by degrees, and was moulded by time and public opinion. It was not theoretically framed for the public and afterwards enforced by authority of law, like the parchment constitutions of some modern states, but was gradually built up by observation and experience, and adopted for public convenience. Like other systems, abuses have crept into it; and the object of the legislature ought to be, to reform these abuses, but not to upset the system.

In advocating the recognition by the legislature of three orders, including pharmacy, in the medical profession, we do not advocate any stringent laws to prevent the members of it encroaching on each other's departments. If penal enactments are considered inexpedient to restrain from practising medicine even the most illiterate charlatan, it would be hard indeed to prevent by legal penalties a well-educated surgeon or apothecary doing that which may be done with impunity by others without any legal or professional qualification. All perhaps that can be done by the legislature is, to enforce a registration of all qualified persons, and to require that the registration shall state the nature of their qualifications—whether in medicine, surgery, or pharmacy. This would enable the public to know the difference between qualified and unqualified practitioners, and to choose from among the legally qualified according to the nature of each individual case, whether requiring medical or surgical assistance.



# MEDICAL GAZETTE.

Friday, August 12, 1842.

"Licet omnibus, licet etiam mihi, dignitatem  
*Artis Medicæ* tueri; potestas modo veniendi in  
publicum sit, dicendi periculum non recuso."

CICERO.

## ILLEGAL PRACTITIONERS.

OF all the questions of medical reform which have of late engaged the attention of the profession, there is perhaps none more important, or involving greater difficulty, than that which relates to the protection of the public and the practitioner against the intrusion of unlicensed pretenders to a knowledge of medicine. This is not a subject affecting the interests of one institution, or one particular class of individuals, more than another: it is one which concerns the public in general as well as every member of the profession. It is, surely, of no small consequence to the former that they should have some evidence of the qualifications of persons in whose hands they entrust their lives; and it is but fair that the practitioner should derive some advantage, in a legal point of view, as a return for the extended course of study he has gone through, and the marks of proficiency which he has been at the pains to obtain. It is not sufficient to leave it to the world to seek him out, and reward his labour and industry. The unlicensed and uneducated pretender, whose only object is gain, will resort to various means of imposing upon the public which he is above employing; and as, unfortunately, the majority of persons, are not sufficiently good judges of medical attainments to avoid the snare which is laid for them, the practitioner pays the penalty of his own upright conduct, and is obliged to sit tamely by, and see the ignorant upstart gain the confidence of his patients, and deprive him of his practice.

767.—xxx.

We alluded in our last number to the impropriety of that proposal which would throw open the doors of medical practice still wider, and removing all compulsion to pass through a certain course of study, and to obtain certain diplomas, would simply *discountenance* unlicensed practitioners, by excluding them from public appointments, &c. and would substitute honourable feeling in the place of legal authority. Such a project may sound very well at a distance, but, in its practical application, it would be any thing but advantageous. It would demolish altogether the partition wall, of the imperfections of which we are now feeling the ill effects, and would leave us naked to the aggression of any one who chose to encroach upon us.

In favour of such a scheme it is said that all men who desire to practise their profession in an honourable and upright manner, and to maintain a proper position in society, will continue to take out their diplomas as heretofore. We doubt not but that *they* will do so, whether compulsion be used or not. But are there not a great many who will be less scrupulous about acting in this honourable way? And is it right that the practitioner, who has gone through a regular routine of study, should receive no more protection than the person who, without education, without any test of his capabilities, assumes the character of a medical man? Common justice requires that a difference should be made between the two, and that the difference should not be confined to a simple discountenancing of the pretender, but should be effected by the institution of active laws against him.

The example of the College of Surgeons is upheld as showing the advantage of making examinations honorary and voluntary. It is well known that the medical man gains little or no legal

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protection by his admission as a member of that corporation. Nevertheless, there are hundreds of young men annually presenting themselves for their diplomas; and the practitioner is not looked upon as orthodox without it. But those who consider the working of the voluntary system, in this instance, to afford an evidence of the propriety of remitting all compulsion in medical examinations, forget that hitherto the Company of Apothecaries, whose license, in a legal point of view, has been of more importance, have enforced on all the candidates for their diploma a certain course of study; and this being the same as that required by the College of Surgeons, students have been able to kill two birds with one stone, and obtain both diplomas with the same expenditure of time that was required for the one. But remove the regulations of the Apothecaries' Company, and substitute no others equally binding, and we shall find the number of men presenting themselves for examination at the College will sensibly diminish. The time and expense required to pursue a regular routine of study, and to attach themselves to one or other of the Colleges, will, it is to be feared, be a sufficient temptation to many to think lightly of honorary diplomas. Irregular practitioners will become much more common, and, having been at less expense in their education, will be able to make their charges at a lower rate, and so beat the authorized medical man out of the field.

The ability to sue for charges in a court of law, and the qualification to hold public appointments and grant recognized testimonials, are, no doubt, inducements to go through the regular form of education, and to obtain the requisite diplomas; but after all they are but inducements, and, if put in the scale against the expense which is avoided by irregular practice, will be

overweighed in the estimation of many; especially when we remember that the medical man does not very commonly have recourse to a legal enforcement of his claims; and that the number who can expect to hold public offices are but few as compared with the general mass.

Our present laws, it is true, do little enough to prevent illegal practice; but still there are existing laws with this object, which, though every day broken, or eluded, still serve to keep alive in the minds of men the distant thoughts of a prosecution, and tend to keep many in check. Of this, their secret influence, we shall be made sensible when the restraint they at present exercise is removed. The objection, that no code of laws can be framed to effect the entire suppression of illegal practice, deserves but little attention. We might as well propose to remit punishments for crime on account of the impossibility of preventing it, and abolish the whole penal code, because it is unequal to the eradication of evil. We know that, to a greater or less extent, illegal practice must and will continue; but is that a reason for giving full scope to it? Is the health of the public to be sacrificed, the medical profession to be injured, and things allowed to take their own course, because a perfect system is unattainable? Yet this argument is employed, or rather this excuse is made, to prevent the interference of the administration on the subject.

It is no unreasonable request that we make: we merely ask that the principles of just government may be carried out here—that protection may be afforded to the practitioner in proportion to his necessities, and to the labour and expense he has been subjected to in order that he may obtain his diploma—that some means may be given to our corporate bodies (for these proceedings would probably be best undertaken by

them), of prosecuting and bringing to punishment such persons as, by open and illegal practice, are injuring the profession and deceiving the public.

It is in this point, perhaps more than in any other, that the bill of Sir James Graham, so often discussed, appears to have been defective. By it the practitioner would receive no assistance in this very important particular. We trust that the subject will be again considered by the honourable Baronet, and that when the bill is brought forward in a more perfect state, we may find some decided provisions made to effect, in a degree at least, the suppression of illegal practice. There will be found, no doubt, many difficulties in the way of it; but without some attempt of the kind, one of the great requisites in reform will be left unfulfilled. In our opinion it is to the want of power, to the want of legal support under which our corporate bodies labour, that many of the evils we have now to complain of are to be traced, rather than to any thing fundamentally wrong in the constitution of those bodies. And whatever reformed system may be adopted, whatever institutions may be placed over us, unless more effectual legal authority be vouchsafed to us, unless we have more power of maintaining our own rights, and of defending the regular practitioner from the aggressions of the ignorant pretender, our condition will not be much improved, and we shall have the trouble of going over the same ground of discussion and conflict which has now so long agitated the medical world.

#### ADMISSION OF PUPILS AT ST. LUKE'S.

We are glad to be able to state that the Governors of St. Luke's have decided that the medical officers shall be allowed to admit pupils, under restrictions similar to those which are acted upon at other large hospitals. This

may be regarded as the first fruits of Dr. Webster's well-timed pamphlet.

*To the Editor of the Medical Gazette.*

SIR,

HAVING seen an article in the MEDICAL GAZETTE of Saturday week, relative to the study of insanity, I beg to inform you that Dr. Webster's pamphlet has already effected some good. On Friday last a memorial was presented by the physicians to the Board of St. Luke's Hospital, requesting that the law passed in 1758 might be revived. This law allowed gentlemen to visit the hospital as pupils, and to observe the treatment of the patients confined. I am happy to say that the committee immediately granted the request.—I am, sir,

Your obedient servant,

ALEX. J. SUTHERLAND.

19, Fludyer Street, Aug. 9, 1842.

#### PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE tenth anniversary of this important association was held on Wednesday and Thursday, the 3d and 4th instant, at the Athenæum, Exeter, when it was attended by about 200 gentlemen from various parts of the provinces, amongst whom we noticed the following :—

Charles Hastings, M.D. Worcester; Jonathan Toogood, Esq. Bridgwater; James Crang, Esq. Timsbury; T. Shapter, M.D. Exeter; Edward P. Pridham, Exeter; Thomas Martin, Esq. Reigate; Edward Barlow, M.D. Bath; S. Laidlaw, Eastdown, Starcross; Joseph Garside, Starcross; F. Fox, M.D. Brislington House, Bristol; T. H. Fuge, Plymouth; W. Budd, M.D. Bristol; T. Cowper, Esq. Exeter; D. Daniell, M.D. Exeter; George Wallis, M.D. Bristol; R. Hughes, Esq. Stafford; W. Hay, jun. Esq. Leeds; T. L. Surrage, Esq. Clifton; W. Mortimer, Esq. Clifton; H. Shaw, Esq. Exeter; J. H. James, Exeter; R. L. Pennel, M.D. Exeter; James Black, M.D. Manchester; S. C. Browne, Exeter; W. Newnham, Farnham; W. J. Wickham, Winchester; P. Miller, M.D. Exeter; J. B. Estlin, Bristol; T. Cann, Seaton; S. Wreford, Ottery St. Mary; Travers Cox, M.D. Bath; H. Boisragon, M.D. Cheltenham; R. H. Lucas, M.D. Exeter; A. Robertson, M.D. Northampton; W. Williams, Heavitree; — Battersby, M.D. Torquay; E. Yarde, Crediton; A. Atkins, Paignton; T. Land, Exeter; G. R. Trewman, Hatherleigh; John Butter, M.D. Plymouth; J. C. Tothill, Topsham; J. Body, Cheriton, Fitzpane; J. G. Croker, Bovey Tracey; J. Parker,

Exeter; W. Collins, Kenton; J. H. May, Exeter; H. S. May, Tiverton; W. Kettle, M.D. Tiverton; W. Empston, Clisthydon; G. Black, M.D. Exmouth; W. Woodman, Exeter; R. F. Burrough, Dartmouth; A. Kempe, Exeter; G. P. Amory, Exeter; J. Spettigue, Exmouth; R. P. Price, Lympstone; J. Billet, Taunton; J. B. Bartlett, Teignmouth; W. Gillard, Totness; T. Hunter, Budleigh Salterton; C. K. Webb, Exeter; R. Arscott, Exeter; J. Edye, Exeter; J. C. Jerrard, Honiton; J. G. Morris, Exeter; S. Devenish, Honiton; W. Caird, Exeter; Erasmus M. Miles, M.D. Heavitree; J. Forbes, M.D. London; P. C. Delagarde, Exeter; T. F. Knighton, Dawlish; A. J. Cumming, Esq. Exeter; H. H. Elliott, M.D. Exeter; J. S. Perkins, Exeter; F. Mackenzie, Tiverton; J. Winterskall, Esq. Surgeon to the Scots Greys, stationed at Exeter; W. M. Cann, Dawlish; Allan Waters, Esq. Exmouth; J. Tucker, Exeter; F. A. Cleeve, Bradninch; H. D. Kingdon, M.D. Exeter; Henry L. Cowen, Army Medical Staff; F. W. Coster, M.D. Castle Cary; J. W. Harris, Esq. Exeter; T. L. Brown, Broadclist; T. Hall, Esq. Woodbury; A. Bartlett, Bath; H. L. Hogg, Topsham; J. Mogridge, Bovey Tracey; E. Hulme, Exeter; H. W. Livett, Wells; P. W. Swain, Devonport; W. H. Merry, Esq. Broadclist; J. D. Jeffry, Esq. Sidmouth; E. Empson, Esq. Crediton; J. Lydon, Exeter; G. G. Bompas, M.D. near Bristol; W. Briscoe, Kenton; C. Budd, M.D. North Tawton; S. Barnes, Exeter; J. C. Davey, Chulmleigh; P. F. Haley, Witheridge; B. M. Browne, Chudleigh, &c. &c. &c.

A Council meeting was held at eleven o'clock, at the conclusion of which was held the

#### FIRST MEETING.—WEDNESDAY.

The retiring president, Dr. Goldie, being unavoidably absent, Dr. Boisragon, as the senior vice-president of the association then present, took the chair. He expressed his regret at the absence of their worthy president, and having passed a very high compliment to that gentleman, said he would not longer detain the meeting by his remarks, but at once resign the chair to his worthy successor. Dr. Boisragon then resigned the chair, when it was occupied by J. H. James, Esq. of Exeter, the president for the year ensuing; being greeted at the time with the hearty congratulations of the members in attendance.

Mr. James then addressed the members in an able manner, but, from its length, we are unable to give more than the following outline. It was listened to with great interest, and appeared to give general satisfaction. He commenced by thanking the members for their kind reception of him,

and for the kind expression of feeling which had placed him in the chair, but expressed regret that it had not been occupied by Dr. Blackall, who was entitled to rank not only as the first man of that city, but also as one of the first men of the day. The state of the doctor's health, however, would not admit of his encountering the fatigue consequent upon such a situation. The region which the association now visited was, from its peninsular and agricultural character, quieter and less agitated than other parts of the kingdom by the busy scenes of trade and commerce; and here the medical profession partook of the character of the district, their only anxieties and agitation being those which belonged to a course of duties, having for its object the alleviation of the cares and troubles of all mankind beside. In the name of his medical brethren here he welcomed the association to the ancient city of Exeter, and the beautiful scenery around it. The city, of itself, might not have so much to recommend it as other flourishing or extensive towns in the north, but it had its share of historic renown; it successfully stemmed the tide of rebellion in Henry VIII.'s reign; it afforded a place of refuge to the Queen of our hapless Charles, and was among the first to welcome that prince, whose firm and sagacious mind laid the foundation of the tempered and rational liberty which had blessed this country for more than a century and a half. It might be asked whether this district had done any thing to improve medical science. An answer would be found in the names of Dr. Glass and Mr. Sheldon. The name of Huxham might also be added as ranking among the foremost in the kingdom. Of the living he made particular allusion to Dr. Shapter, whose works bore ample and acknowledged testimony to a high degree of sagacity, and a powerful judgment. This visit of the association occurred when most important changes in the constitution of the profession were contemplated. The object of the association had always been to support the honour and interest of the profession, and at the same time to secure, as far as possible, the welfare of the community. Amongst the committee reports to be laid before them was one on the subject of medical reform. It was recognised by many leading medical men, and accepted by the legislature, that the state of the profession was, in many respects, exceedingly anomalous; and so deeply impressed was this opinion upon the government, that one of the ministers intended to bring in a bill for their future regulation. The perpetual fluctuations in the schemes of medical education, varying according to the opinions of numerous bodies, under no external control, was one great source of evil. It was, however, difficult

to know how to apply a remedy ; for if the minimum qualification were pitched too high, no legislative power could prevent the intrusion of irregular practice to a great extent. If too low, the character of the profession, now rising in public opinion, would be damaged, and the public injured. The difficulty would be to fix the precise line neither too high nor too low. Irregular practice was another subject which deeply concerned the profession. If it were true that government did not intend directly to interfere with this, and the remedies now offered by law were to be abandoned, the interests of a large number of members would be injured. Their self-interest must be sacrificed, if justly demanded by the public welfare ; but in this case that was doubtful. It was admitted that the community had a right to be protected from those who would impose on them unsound food or unwholesome drugs ; and it was equally reasonable that they should be protected from unqualified and uneducated practitioners. No ability, no industry, would suffice to enable men to treat diseases safely, if the first element of medical knowledge, that of the structure of the human body, were wanting. It was much to be regretted that the provinces were excluded from all influence in regulating the proceedings relative to the profession, because gentlemen who practised entirely in the metropolis, and spent their whole lives there, could not have a sufficient knowledge of medical affairs in country districts. The schemes of education, propounded by the ruling bodies, proved this fact. They had not been solicitous to make the most of the means of instruction afforded by the provinces, and were wholly regardless of the importance of parents being able to keep their children under their own roofs, and placing them for instruction in their immature years in situations more favourable to moral superintendence than could be obtained in a crowded metropolis. He hoped that in future regulations due care would be taken that their claims on this point would neither be unheard nor unheeded. Medical reform would no doubt present many difficulties to the legislature, but it was a question which, if rightly disposed of, would confer great and lasting benefits on the country. Legislative enactments in such a case ought to be well and carefully considered, and based upon information derived from all the sources likely to bring the different bearings of the case into full view. There was more to be feared from premature and crude legislation than from delay. Reform would not be just unless the claims and interests of the present race of practitioners were fully attended to ; nor wise, unless ample provision were made for future improve-

ment ; nor fair to the community, unless the welfare of all were consulted. Judging from the communications he had had on this subject from the members of the county and city, he inferred that there would be no want of inclination to consider these questions attentively, and to deal justly in the matter—the only doubt was, how far the legislature was informed of the numerous and complicated bearings. None of its acts had hitherto evinced sufficient knowledge of medical topics. Such knowledge was not to be found in the regulations enacted or proposed, respecting lunatics—in some of the clauses of the coroners' act—in the imperfect working of the anatomy act, nor in the apothecaries' act of 1815. The latter act conferred an unreasonable degree of power on a body which, it was but common justice to say, had exercised it with advantage, and which if it had set the example of throwing aside its trading character, would have greatly deserved their respect. He had every wish that the respective classes of the profession should be upheld in their just privileges, and as regarded the great chartered bodies, which had been so much condemned, he was of opinion that they had discharged the duties which they apprehended were imposed upon them more faithfully than was commonly believed. They had erred from the circumstances in which they were placed—their position was peculiar. They arose, one after the other, out of a kind of chaos, to fulfil purposes which they had in truth answered to a considerable degree, but they were themselves now convinced that some sort of change was requisite. If called upon to state his own opinions, he would say, as he had already done, that he agreed with the general council on the necessity of having the primary license to practise laid down upon a general standard in every part of the empire, and that candidates, as in the universities, should be classed according to their proficiency. This would produce emulation, and the most promising fields of practice would be opened to those who distinguished themselves. At the same time, the standard would, with safety, admit persons whose services might still be obtained by the less opulent classes of society. The examinations, he conceived, should be essentially practical, as being the only test of real qualification. As to the government of the profession, if it were entirely entrusted to the College of Physicians and Surgeons, the great and deserving body of general practitioners would apparently be unjustly excluded from any influence in making those regulations by which it is to be guided, and which, to a certain extent, it has hitherto possessed. If, on the other hand, they were to be admitted numerically to any convocation of the medical faculty, they would



swamp the first class of the profession. It appeared to him that, without reducing all things to an impossible level, the train could be so adjusted that each order might possess its due share of influence, and none be deprived of it altogether. These questions demanded calmness, prudence, and forbearance in their discussion, and he was sure they would meet with them from his medical brethren. He regretted having occupied the time of the members at so great a length, and in acting as he believed contrary to the usual routine observed at the annual meetings, by addressing them upon topics he had introduced. He concluded by calling upon Dr. Hastings, the Honorary Secretary, who read the following

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forcibly points out many of the evils that have resulted to the public and to the profession from the want of a suitable legal organization, which, they maintain, can only be obtained by the intervention of the legislature; and they consequently desire that a well-formed Bill be submitted to the senate; but they go on to observe, that much importance attaches to the source from which such a Bill should emanate. Speculative reformists, from a too ardent zeal to realize speedily all their conceptions, would be liable to seek too much. Existing institutions, on the contrary, if intrusted with the framing of a Bill, would concede too little. In this emergency, it is most desirable that any Bill for reforming the medical profession—for calling forth its full energies—and adapting it to the necessities of all classes of the community—should issue from those who would be untrammelled by either extreme party, namely, the ministers of the crown.

It is highly gratifying to find that the course recommended in the above memorial has been adopted by Her Majesty's government. Early in the present session of parliament the Secretary of State for the Home Department announced that a Bill for amending the polity of the medical profession was in a forward state, and he was not without hope that he might be able to submit it to the House of Commons before the prorogation of parliament. This announcement was, as might be expected, received by the profession with every mark of satisfaction, and much speculation was immediately called forth as to the nature of the provisions of the proposed Bill. Your Council could not fail to see that an important crisis had now arrived, as upon the nature of the proposed Bill the future destiny of the profession in a measure depended; and they therefore, after having met several times and considered the question, thought it right to address Sir James Graham, and to inform him what the principles were that have been maintained at the successive anniversary meetings of this numerous and influential Association. They therefore, on the 5th of March, unanimously resolved to send the following memorial to the Right Honourable Secretary of State:—

“ We, the undersigned members of the Council of the Provincial Medical and Surgical Association, respectfully beg leave to offer you our thanks for the declaration made by yourself in the Commons' House of parliament, that Her Majesty's government are about to bring a Bill into parliament for the better regulation of the medical profession.

“ That this duty might be undertaken by Her Majesty's government was the hope expressed by the very numerous body whom we have now the honour to represent, at their late anniversary meeting holden at York, in

the month of July last; and it will perhaps be in your recollection that a memorial to that effect, having been adopted at the meeting, was subsequently laid before you.

“ To the principles expressed in that memorial we take the liberty of again drawing the attention of yourself and your right honourable colleagues, embodying as they do the sentiments and wishes of a very large and influential portion of that profession for the welfare and protection of which you have been pleased to signify your intention to provide.

“ The evils complained of by the members of the medical profession, in the redress of which it should be observed the general community as well as the medical profession are deeply interested, are the imperfections and unequal character of the existing methods of qualification for medical licenses and degrees, and the inefficiency and exclusiveness of the existing medical corporations, together with their want of power to afford protection to the public and to the medical profession against the arts of unqualified and ignorant pretenders.

“ In applying to Her Majesty's government for redress of these evils, we are desirous neither of injuring existing institutions nor of abrogating those distinctions in the profession which we believe to be useful to the public service. But we feel that we should be guilty of a dereliction of duty if we did not express respectfully, but firmly, that unless the present medical corporations shall undergo extensive changes in their constitution, they can never become fitted for the government of the profession at large, seeing that they have not hitherto secured the confidence of its members.

“ We beg leave to express our opinion that the members of the medical profession, not only in consideration of the character of their education, but in accordance with the general institutions of the country, are entitled to elect the medical members of the councils, or of the corporations to which they severally belong; and that any measure which shall fail in securing to them such a privilege, will be felt as the denial of a right to which they think they have a just claim.

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that we express the wishes not only of the numerous Association with which we are ourselves connected, but also those of a very large number of our professional brethren throughout the country."

The receipt of this Memorial was politely acknowledged by Sir James Graham, but his letter contained no information as to the nature of the Bill which it was understood the Government was intending without much delay to introduce into the House of Commons. It therefore became a question whether it would not be desirable still further to urge upon the attention of the Government the principles of Medical Reform which had been adopted by this Association; and as several letters were written to the Council, pointing out that some good result might arise from a deputation of members being appointed to have a personal interview with the Home Secretary, the Council met again on the 26th of March, and unanimously resolved, "That it appears expedient to this Council that a deputation, consisting of six Members of the Association, should seek an interview with the Right Honourable Sir James Graham, and explain to him the views which are entertained by this Association on the subject of Medical Reform, and request his attentive consideration of the same."

The deputation, however, did not go up to London, for within a short space of time after the above meeting, it became generally known, by a communication from the Secretary of State to Dr. Webster, that it was very doubtful whether the state of public business would permit the government to legislate on medical affairs during this session of parliament. This being the case, it appeared to the council far better that the deputation should directly emanate from the Anniversary Meeting, as thereby the whole weight and influence of the Association would be brought more immediately to bear on the question. It may be right to mention further, that on a notice being given by the Right Hon. Secretary of State that he contemplated introducing a Bill into Parliament to empower her Majesty to grant Charters to the Colleges of Physicians and Surgeons, the Council thought it right to petition both Houses that they would not entertain any measure of partial medical legislation until the whole subject of medical reform was brought before them. It remains therefore for the members present to decide upon the course now to be pursued, in which they will doubtless be assisted by the Reform Committee, who have given due consideration to the information which has been more lately communicated upon this question, and who are prepared with a Report to be read at this meeting.

*Poor Law Medical Relief.*—It has been the aim of the Association ever since the

year 1836, to obtain some legislative enactment for the better regulation of Medical Relief for the Poor. To this object the attention of the Council has been specially directed during the past year.

The publication of the Reports of your Poor Law Committee, and their extensive circulation among Members of Parliament and other influential persons, although involving the Association in considerable expense, were deemed essential preliminaries to any parliamentary discussion on the question.

In accordance with the advice of Mr. Serjeant Talfourd, your Council communicated in January last with Sir Robert Peel and Sir James Graham, and requested their consideration of the principal statements and suggestions of your Poor Law Committee.

The distinguishing features of the several plans proposed by that Committee were laid before Her Majesty's Ministers; who expressed their thanks for the information thus afforded, and promised particular attention to the subject, but declined pledging themselves to any parliamentary measure.

Anxious to obtain the assistance of all who might be endeavouring to promote an equitable settlement of this question, your Council requested the co-operation of the President and Council of the London College of Surgeons. The Secretary of that body stated, in reply, that the President had conferred with the Commissioners, and hoped to effect an amendment of the system. The College, therefore, declined to assist in bringing the subject before Government or Parliament, and recommended the Association to refrain from further proceedings until after the publication of the alterations then about to be made by the Poor Law Commissioners, which the College believed would "be found to redress nearly the whole of the grievances of which the medical officers of Unions have complained."

Shortly after the propositions of this Association had been submitted to the Government, the Poor Law Commissioners published and circulated their new medical regulations, obviously the result of the long-continued efforts of the medical profession. The advantages and defects of these regulations have been considered in the late special report of your Poor Law Committee, which was adopted by your Council, and is now in the possession of every member of the Association.

Acting on the suggestions contained in that report, your Council again memorialised the Secretary of State, soliciting him to introduce such provisions into the Poor Law Amendment Bill as might remove the remaining imperfections of the medical arrangements. This application has been politely acknowledged; and from an imper-



tant communication very recently made to your Council, they have reason to believe that the appeals of this Association, together with the personal exertions of the late President of the London College of Surgeons, have induced the Secretary of State to accede to an augmentation of the salaries of Union medical officers.

In the absence of definite information respecting the intentions of Government, it would be obviously premature to pronounce an opinion on the expected improvements; but your Council feel persuaded that there can be no adequate security for an efficient and satisfactory administration of this department of the public service, until it be placed, partially at least, under the superintendence and direction of medical authorities.

The attainment of this object, therefore, in connection with other legislative provisions for the public health, demand the continued and vigilant attention of the Association: meanwhile, your Council congratulate the members upon what has been effected, and hope that the wide diffusion of correct views and right principles, which they have been instrumental in promoting, may in the end produce further results, alike advantageous to the members of our profession, and gratifying to every humane and philanthropic mind.

*Benevolent Fund.*—The Council regret to say, that the benevolent fund has not yet been enabled to resume its operations in conformity with the resolutions passed by the Association at Southampton, in 1840; great exertions have, however, been made during the past year, and the Central Committee confidently anticipate that in a short time they will again be able to fulfil the benevolent intentions of the donors and subscribers to the fund. A more detailed account of the state of the fund will be given in the report to be presented to the meeting by the Central Committee.

*Congratulatory Addresses to the Queen, &c.*—Since the last anniversary, the birth of H.R.H. the Prince of Wales has occurred; and this auspicious event could not fail to call forth from the medical profession, as well as from all classes of Her Majesty's subjects, the most lively expressions of joy and gratitude; and your Council felt that the occasion demanded that the Association should testify in an appropriate manner the participation of the members in the general rejoicing. Congratulatory addresses have accordingly been presented to Her Majesty, and to H.R.H. Prince Albert.

*District Branches.*—Your Council have to report the formation of two district branches—one at Hull, called the East York District Branch, and the other at York, called the York District Branch. The rules

by which these branches are governed are similar to those of the branches which were before in existence. It is also right to observe, that the Bath and Bristol branches are united into one branch, which is now the Bath and Bristol District Branch.

*Conclusion.*—Your Council are deeply solicitous for the progressive advancement of the Association,—a result which can only be insured by the united endeavours of the members to promote the objects for which we associate, namely, the increase of medical knowledge, and the maintenance of the honour and respectability of the profession generally in the Provinces, by promoting friendly intercourse and free communication of its members, and by establishing among us the harmony and good feeling which ought to characterise a liberal profession.

It cannot be denied that the prosecution of such objects must be beneficial, and exert a salutary influence in obtaining for our noble profession that proud position in public estimation which as a class we are entitled to occupy. Indeed, the successful prosecution of these objects will do more for us than any legislative enactments can effect, for it will bind us together by the ties of mutual regard and kindness, and will enable us, under all vicissitudes of life, to cherish the consoling reflection that we have unremittingly endeavoured to render the art of medicine more perfect, and, consequently, ourselves more instrumental in administering relief to the sickness and sorrow of our fellow men.

The Dr. was repeatedly cheered during the reading of the report; after which,

Dr. Miller, of Exeter, moved, and Mr. Barnes, of the same place, seconded,—That the report of Council now read be adopted and printed; which was passed unanimously.

Mr. Soden, of Bath, inquired the amount of money received by the secretary in the shape of subscriptions; and being informed that it amounted to a little more than £1000, said, that it appeared to him that there must be a large amount of arrears upon the books. If the Society now numbered 1400 members, its income ought to exceed the sum which had been given by the worthy Secretary.

A conversation ensued, in which it was declared that a large amount of arrears did appear upon the books of the Society, and that it was not honourable on the part of members who neglected to pay their subscriptions, when they were receiving not only the annual volume of Transactions, but also of the weekly journal of the Association, amounting in value to nearly the sum required annually from them. After further discussion, Mr. Soden concluded by giving the following notice of motion for next year:—

“That the names of the members whose subscriptions are two years in arrear, be

printed as a separate supplementary list." (Cheers.)

Mr. Rumsey, of Gloucester, proposed to make the following addition after the 16th rule of the Society, viz. "That members of district branches be allowed the option of paying either the annual guinea with other members of the association, or a third part of the guinea annually without being entitled to receive a copy of the Transactions, or of the Provincial Medical Journal." Was not supported by any member, in the absence of Mr. Rumsey, and, consequently, fell to the ground.

Dr. Hastings then read to the meeting a letter from Dr. Branson, of Cambridge, putting it to the consideration of the members whether a publishing society could not be formed upon a similar principle to one now in existence, and supported by the clergy. A great many works of the old authors were well worthy of being republished, but which could not be done but by a society of the above character.

Dr. Barlow said the letter had undergone the consideration of the Council, and there was a great deal in it to admire. The only difficulty was as to how the proposition could be carried out. It could not be carried into effect without a great number of contributors. In the clerical society which had been instanced, he believed there were upwards of 5000 members; but where they would find that number of their brethren of the profession he could not tell, and more especially after reading the proposition which had been placed upon record by Mr. Rumsey. He was gratified with the tone and spirit of Dr. Branson's letter, and, for one, should be glad to see it carried into effect. He did not think the Association could adopt the latter, and, therefore, he would move that this meeting offer their thanks to Dr. Branson for his suggestion relative to a Medical Publishing Society, and the members would be happy to find that such a society could be supported by the profession.

Dr. Wallis, of Bristol, was persuaded of the good that would result if a society of the description mentioned could be carried into effect. He should be glad to see more of the sterling good, resting upon the shelves of our various libraries, published, instead of the various works of novelty which are now daily issuing from the press—good which he was certain would often be found instructing and interesting to the seniors as well as to the juniors of the profession. He should be glad to see the society in existence, but was afraid such an one could not succeed. He sat down by seconding the resolution.

Mr. Martin, of Reigate, considered it a most desirable proposition, and suggested that perhaps a committee could be formed to receive subscriptions, and hoped they would not lose sight of the proposition.

Dr. Boisragon, of Cheltenham, said there was not so great a lack of old books as appeared to be imagined by members present. Sydenham has been mentioned several times during the debate; and he was confident that, if required, he could procure 150 copies of "Swan's Sydenham" at the rate of 4s each, and other works, termed the medical classics, at equally cheap rates.

Dr. Forbes, of London, observed that the proposition laid down by Dr. Branson was not new. He had himself printed a prospectus, and a proposition had also been offered by two of their own associates, viz. Messrs. Joseph and William Buller, of Southampton.

The motion was then put, and carried unanimously.

The Chairman next drew the attention of the meeting to the following resolutions of the Shropshire and North Wales District Branch Association, and desired the opinion of the members upon the question, and a very animated discussion ensued:—

"It being the opinion of the members of the Shropshire and North Wales District Branch of the Provincial Medical and Surgical Association, that no inquiries of insurance companies should be answered unless accompanied by a fee of £1. 1s.

"Resolved that, in order to secure unanimity among the members of the medical profession, the subject be referred to the General Meeting of the Association at Exeter."

Mr. Gillard, of Totness, opened the debate by reading a letter which he had received when he was required to give his professional opinion as to the health of an individual, but no remuneration offered. [This we understood to be the purport of the member's speech; but, from the situation in which we were placed, his remarks were almost inaudible]. An application had been made, but no satisfactory reply could be obtained.

Mr. Wickham, of Winchester, said the same question has been entertained by the Southern District Branch of the Association; and they wished it made known that their opinion was that the profession should be remunerated. They were called upon to give certificates, and for which they were held responsible, even in a court of justice. As the offices called upon the profession so peremptorily to give the certificate, the profession ought to call upon the offices to pay, the more especially as the office derived all the benefit. If the certificate were not good, the office refused to effect the assurance.

Mr. Newnham, of Farnham, considered it a delicate question they were discussing. He was an appointed referee for thirteen or fourteen offices, and his charges were not uniform; and from his experience he could

not see a method by which they could be made so. In certain cases the patient must pay; and with others, payment was out of the question.

Dr. Robertson, of Northampton, expressed similar views of the subject, and drew a resolution deprecating the entertainment of the question, but which he ultimately withdrew.

Drs. Black and Forbes, and Mr. Martin and Mr. Jerrard, of Honiton, also spoke upon the subject; the learned doctors stating that, in some instances, they charge the patient, and, in others, they make the offices their debtors.

Dr. Forbes spoke forcibly upon the subject, and strongly deprecated the entertainment of the question, which, he said, would disgrace them as a body if they were to refuse to sign a certificate for any one who had been a patient. What would be said of a clergyman or a lawyer who refused to do a similar act for a neighbour? Here the subject fell to the ground.

Dr. Robertson, of Northampton, in a brief speech, referred to the pleasure experienced by the members in their visit to York at the last anniversary, and regretted that their respected retiring President was not present to receive their congratulations for the services he had rendered the Association during the present year. He concluded by moving the following resolution:—"That the thanks of the meeting be given to Dr. Goldie, the retiring President, and that he be appointed a Vice-President of the Association." (Cheers).

Dr. Forbes, of London, seconded the resolution, which was passed with marked approbation.

Mr. Soden said that a most pleasing duty had fallen to his lot. He had heard reluctantly that their esteemed secretary Dr. Hastings intended to retire from the office which he had held so long, and so satisfactorily (cheers), (he could say it without hesitation) to all the members. In filling up the other offices of the Association there could be no difficulty; but where they were to turn for another secretary he was at a loss to know, as he was sure was also every other member of their Society. That the duties of the Association were very heavy, no one could deny, and no one, he knew, was more anxious to fulfil those duties than their friend Dr. Hastings. By the constitution of the rules of the Association, they could not, at the present, release him; and he hoped that they never should lose him from taking the active management which he had hitherto done in their affairs. The only method which suggested itself to him was the alteration of the 7th rule of the Society, by which it was now rendered imperative upon the secretaries to reside in Worcester. He stated

his intention to give a notice upon the subject for the next annual meeting, and having further expressed the great obligation the members were under to Dr. Hastings, he concluded by moving the following resolution:—"That the thanks of the meeting be given to the secretaries of the Association, Dr. Hastings and Mr. Sheppard." (Much cheering).

Mr. Toogood concurred in all that had been said by Mr. Soden, and that the members could never sufficiently appreciate, or be too grateful for, the eminent services rendered by Dr. Hastings, and, therefore, most cordially seconded the resolution. (Great cheering).

Dr. Hastings replied with much feeling. He assured them that he felt deeply indebted to them for all their past as well as their present kindness. He felt that the time he had passed in connection with this Society had been one of unmingled gratification. He could truly say that there was no one occasion on which he had attended these anniversaries, that he had not gone back filled with gratitude for the unceasing kindness he experienced, and pleasure at the increased knowledge he had derived from what he had heard and seen on these occasions—(cheers). It was of course matter of the sincerest gratulation with him that he had been one of the first who took an interest in this Society, and who thought that such an Association as that which had now become so prominent, and of so much importance, should be formed in the provinces. He, of course, under these circumstances, felt deeply grieved in the contemplation that the time should ever arrive when, less able and active than he was at present, he should be separated from those duties which were so acceptable to his feelings, and to his habits—(hear, hear). But the days of activity of man were comparatively few. He had already been five-and-twenty years in active practice in his profession, and he had been actively engaged during a period of ten years in carrying on the duties of this Society. He need not tell them that its duties were very heavy, and required constant and diligent care—(hear, hear). The time would come when he would be no longer equal to those active duties, and he must either neglect his professional duties, or those of the office; for, as he had said before, although he had been equal to the task, he might not be much longer so; and as it was his hope that this Society should be one not for the present day merely, but that it should go on to distant ages, that they might not only see it carried on with activity and zeal during their time, but that provision should be made, that after they had quitted the scene, and another generation had risen, this Society should still flourish and carry down

to the distant—far distant future—the zeal and energy—the honour and renown, of this present time—(applause). Under these circumstances it became imperative that he should, at no distant day, relinquish his office, and the duty of filling it up would then devolve upon them. He requested most earnestly that measures might be adopted which would prevent the Society from suffering from that which must happen—the relinquishment of those duties which now devolved upon him. He was sure that the day, come when it would, would be one of great sorrow to him, because, as he had said before, if in the course of his life he had received gratification from any one act, it was from having been amongst the first who associated for this great object—an association which was unquestionably first in this kingdom, and which had gone far beyond what he or any of them could have calculated upon—(cheers). After a few other observations the learned doctor sat down, amidst warm and general plaudits.

Mr. Soden then gave the following notice of motion for next year:—

“At the next Annual Meeting I intend to propose that the law, limiting the number of secretaries to two, be altered; and that the word two be omitted, that the number of secretaries may be indefinite.”

Dr. Hennis Green, of London, then moved “That the thanks of the meeting be given to the Council for the past year, and that they be requested to continue their services, with the following additional members; and that they be empowered to add to their number:—Patrick Miller, M.D. Exeter; Thomas Davies, M.D. Chester; R. Martland, M.D. Blackburn; E. G. Brancker, M.D. Dundalk; T. W. Coster, M.D. Castle Carey; R. D. Thorpe, M.D. Leeds; R. S. Hopper, M.D. Leeds; Samuel Smith, Esq. Leeds; J. P. Garlick, Esq. Leeds; William Henry, Jun. Esq. Leeds; John Yonge, M.D. Plymouth; W. Collyns, Esq. Kenton; Richard Lewin Pennell, M.D. Exeter; John H. Fuge, Esq. Plymouth; Edward Pridham, Esq. Exeter; Thomas S. Hodge, Esq. Sidmouth; R. Pullan, Esq. Hamlet near Leeds; Charles Chadwick, M.D. Leeds; William Price, Esq. Leeds; William Braithwaite, Esq. Leeds; Thomas Nunneley, Esq. Leeds; T. P. Teale, Esq. Leeds; G. Taylor, M.D. Maidstone; Sibbald, M.D. Maidstone; Thomas Hitchings, Esq. Maidstone; Thomas Hunter, Esq. Budleigh Salterton; William Trevor, Esq. Dulverton; William Haynes Maunder, Esq. Cullompton; William Gillard, Esq. Totness; Samuel Barnes, Esq. Exeter; Alfred Hardwick, M.D. Kensington; Durrant, M.D. Ipswich; G. K. Bree, Stowmarket; S. Burman, Wisbeach; Thomas Cammick, M.D. Spalding.

Mr. Crang, of Timsbury, seconded the resolution, and it was unanimously adopted.

Dr. Barlow then read the report of the Reform Committee, which congratulated the members upon the progress the cause of reform had made during the past year, and stated that the report of the General Council had so fully expressed the proceeding of the Association in their report, that it left but little for the Committee to advance. Dr. Barlow having concluded reading the report, Mr. Crosse, of Norwich, moved—

“That the report of the Reform Committee be received and printed; that the thanks of this meeting be given them for the trouble they have taken in preparing it, and the Committee be reappointed, and that the General Council be especially enjoined to watch vigilantly during the ensuing year over all proceedings in Parliament and elsewhere, which have any relation to the subject of medical reform, and that they be empowered to employ every means which their judgment may direct for upholding the principles of reform which the Association has so long and so steadily advocated: these principles being clearly and unequivocally declared in the several reports heretofore presented to the Association by their reform committees, and explicitly specified in the memorial lately submitted to the Right Hon. the Secretary of State for the Home Department by the General Council.”

Mr. Martin, of Reigate, seconded the resolution, and it was unanimously adopted.

Dr. Forbes, seconded by Dr. Crosse, proposed the admission of several foreign professional gentlemen as honorary corresponding members of the Association, who, upon the recommendation of the first-named gentleman, were accepted.

This concluded the general business of the morning.

Mr. Newnham, of Farnham, then read an able and amusing paper upon professional empiricism, which was received with much approbation.

Mr. Collyns, of Kenton, next exhibited to the meeting a child suffering from exostosis in the upper jaw, and which threatens, at no distant day, to stop up the entrance of the mouth. Excision, it was said, is the only remedy that could be applied, and which might be attended with all but certain death.

Dr. Wm. Badd mentioned to the meeting a case of milk secreted from the vagina of a girl eight years old. The liquid was exhibited, and three pints are said to have passed in twenty-four hours.

Mr. Toogood, of Bridgwater, read a case (with illustration) of exostosis of the hand, and removal of metatarsal bone of ring finger.

Dr. Hastings next read a letter from Dr.

Jefferys, of Liverpool, on gratuitous attendance, and the members separated.

SECOND MEETING.—WEDNESDAY  
EVENING.

The second general meeting of the Society was held the same evening at eight o'clock, when there was again a full meeting of the profession. The business was commenced by Dr. Shapter reading an account from Mr. Collins, of Kenton, of a case of osseous uterine tumor found in the pelvis in the grave yard, eight years after burial.

The Chairman then called upon Mr. Sands Cox to read his address in surgery; but as that gentleman did not appear,

Dr. Hastings said that he had not heard from Mr. Cox upon the subject, but that he understood he had been subpoenaed to Warwick in a case of infanticide.

Dr. Wallis, of Bristol, read some interesting cases resulting from the good effects of incision of the scalp in affections of the brain, and as a method of healing epilepsy.

Dr. Shapter next read the abstract of an able paper from William Addison, Esq., of Malvern, on the corpuscles of the blood, and on the formation of tubercle. This case it was agreed should be published in the *Transactions*.

The report of the Benevolent Fund was here called for, when Dr. Barlow said he had been entrusted with the report by Dr. Conolly, of Cheltenham; but he was sorry to say he had not received the financial part of it. It was agreed in consequence that it should be read the next day, presuming that the deficient part would be forwarded by the first post. The general business was then proceeded with.

Mr. Pridham, of Exeter, said, it gave him much pleasure to propose the resolution with which he had the honour to be entrusted, knowing that the subject of it was so capable of executing the task he had undertaken. He then proposed—

“That Dr. Shapter, of Exeter, be requested to deliver the Retrospective Address in Medicine at the anniversary meeting for 1843.”

Mr. Besley, of Exeter, seconded the resolution, and heartily concurred in all that had been advanced by the mover of the resolution, and bore ample testimony to the qualifications of his townsman to fulfil the honourable duty imposed upon him.

Dr. Shapter felt gratified with the honour conferred upon him, and hoped that his labour would meet the approbation of his associates.

Mr. Wickham, of Winchester, moved—

“That William Hey, Jun., Esq., of Leeds, be requested to deliver the Retrospective Address in Surgery at the anniversary meeting for 1843.”

Mr. Mortimer, of Clifton, seconded the resolution, and it was carried unanimously.

Mr. Hey briefly acknowledged the compliment.

Moved by Mr. Pridham, of Exeter, seconded by Mr. Hunter, of Budleigh Salterton—“That the thanks of the meeting are due, and that they be given, to the Poor-Law Committee, for the zeal and energy manifested by them on the subject of Medical Poor-Law Relief.”

Dr. Hastings produced a letter from Mr. Guthrie, late president of the College of Surgeons, on the subject of Poor-Law Medical Relief; but as it has appeared in all the medical periodicals very lately, it was not considered necessary to read it.

Dr. Black then read a communication from a medical officer of the Leigh Union, Lancashire, relating to the inadequate remuneration of medical officers in Unions, and commenting on the injustice of the Guardians, who seek, by their system of tendering, to reduce still lower the present inadequate remuneration allowed by the Commission. The writer stated that during a period of eleven months, the rate of payment per head was two shillings and eleven pence, and showed that, with the most meagre attendance that could possibly be given, they would come to seven shillings: the Union authorities being consequently the gainers of three shillings and seven pence per case, by their illiberal system of accepting the lowest tender they could get. The paper was received with much satisfaction by the Association.

The attendance was tolerably numerous, and the proceedings did not terminate till 12 o'clock at night, when the meeting was adjourned to 12 o'clock on Thursday.

THIRD MEETING.—THURSDAY.

The members again met at the Athenæum at 12 o'clock. Mr. James in the chair.

Dr. Barlow commenced the business by reading the report of the Benevolent Fund. The report congratulated the members upon the position in which the Fund was now placed, and that it was in the situation contemplated by the resolution passed at Southampton in 1840. It deeply regretted that after the present meeting the Committee would have to take into consideration a great number of very urgent cases, and made a very strong appeal to the members. He concluded by making a very forcible appeal on behalf of the fund.

Mr. Newnham, of Farnham, rose to move the resolution, and complained that, after having examined the list of subscribers to the Benevolent Fund of the Association, the amount received was principally from non-professional friends through the interest of a few medical brethren, and he inquired,



Could the Fund be supported, seeing the source from which the money had emanated? Could they again ask their non-medical friends to give donations? The support must come from the members themselves, who, it would appear, took but little interest in its success, when, from about 1,350 members, only a little above £100 had been subscribed. He wound up a very able appeal by relating an anecdote, which concluded by shewing the sympathy of a *friend* who could feel for the sufferings of his fellow men in every place but his pocket: this he thought was the case with the members of the Association (cheers). He then moved—

That the report of the Benevolent Committee be received and adopted, and that the thanks of this meeting be given to them for the exertions they have made to increase the funds of this important branch of the Association.

Mr. Fuge, of Plymouth, seconded the resolution, and hoped the appeals of Dr. Barlow and Mr. Newnham would be responded to in a manner that would do credit to the members of a liberal profession.

Mr. W. Hey, Jun., of Leeds, said that in the North they had a benevolent fund of their own, which was no doubt the case in other parts of the country, to which members contributed before the present fund was contemplated.

Mr. Martin, of Reigate, also made some well-timed remarks.

Dr. Hastings was glad to say that the members in the neighbourhood of Mr. Hey and Mr. Martin were liberal contributors, and that since the appeal which was made when the 10th vol. of the Transactions was distributed to the members, he had received about four times as much as he had done in any previous corresponding period.

Mr. James (the president) also appealed to the members for their support, and concluded by observing, that it would be singular if, in a profession which was renowned for its liberality to all others, it should not be so to its own members.

Dr. Boisragon, of Cheltenham, followed, and spoke of the good effects which the fund had already done in its limited capacity; and said, however affluent we may appear at the moment, there was no telling which among them might be glad at some period to apply for its relief.

The resolution was then put to the meeting, and agreed to unanimously.

Mr. Estlin, of Bristol, inquired of the Chairman whether the Address on Surgery had been received from Mr. Sands Cox, or any explanation why the meeting was to be deprived of the usual communication on this interesting subject.

The Secretary replied that he had not

heard from Mr. Cox since his arrival in Exeter, but he had beforehand, that he had been subpoenaed to Warwick, to give evidence in a case of infanticide.

Dr. Black, of Manchester, then proceeded to read the Retrospective Address in Medicine, which occupied upwards of two hours in the delivery, although a great part was unavoidably omitted for want of time. As it will be published in the Society's Transactions, any notice of it here would be superfluous.

Mr. Turner, of Manchester, in a highly complimentary manner, moved "that the thanks of this Meeting be given to Dr. Black for his excellent Address, and that he be requested to print it in the Transactions."

Mr. Crowfoot, of Beccles, seconded the resolution, and it was carried with great applause.

Mr. James (the president) regretted that Dr. Black's address had not been divided into two parts, and if he had known Mr. Cox's address was not to be delivered, he should certainly have supported such a proceeding, and induced Dr. Black to have read the first part on Wednesday evening.

Dr. Forbes thought that, in future, it would be much better to divide the two addresses into three, which would shorten the labour of each, and give the lecturer an opportunity of more fully considering the various parts appropriated for his consideration. For one, he could bear ample testimony to the able manner in which Dr. Black had treated upon a subject of such an extensive character, and had no doubt the learned gentleman would concur in the suggestion he had thrown out.

Dr. Black we understood to agree with Dr. Forbes.

Mr. James (the president) said there was a great deal of force in Dr. Forbes's suggestion, and he would take care that it did not go unconsidered.

Dr. W. Budd, of Bristol, then briefly drew the attention of the members to some illustrations and remarks on symmetry in disease, which he stated he had read before the Royal Medico-Chirurgical Society, in the autumn of last year, and which paper will appear in the forthcoming journal of the transactions of that society.

Dr. Hastings produced a drawing of a case which he explained, showing a case of tumor pressing on, and destroying the functions of, the right lung in a female.

Mr. Turner, of Manchester, exhibited a case of compound dislocation of astragalus, and read a very able and interesting lecture on the mode of treatment in this and other cases. This exhibition appeared to give great satisfaction to the members, and the Chairman hoped the papers would appear in the Transactions.

Mr. Fuge, of Plymouth, instanced a case of calculus, from Mr. Square, of that place.

Mr. Pridham, of Exeter, also produced a case of calculus in a female, which was spontaneously voided.

Dr. Barlow exhibited, for Mr. Norman, of Bath, a broken-down stone of lithotrity.

Mr. Jerrard, of Honiton, read a case of tumor in the rectum removed by ligature.

Dr. Hastings read a case, from Mr. Higginbottom, of Nottingham, with an instrument for stopping hæmorrhage in the gums after extracting teeth.

Dr. Hennis Green read a paper, by Mr. Lees, of London, on the use of Indian hemp in convulsive diseases.

A few cases were left unread for want of time.

Dr. Henry Fox, of Bristol, rose to propose the following resolution. He regretted he had not more frequently attended the meetings of the Association, as the information which had been imparted at the present one was an ample reward for any exertion he had made to be present. He had received an abundant recompense, and he felt the great and deep sense of obligation he was under to those gentlemen who had read cases to the meeting. This feeling he was sure he was joined in by all present. He then moved—

“That this Association is indebted to those gentlemen who have read cases, and presented communications at this meeting, for which the thanks of the members are hereby tendered to them.”

Dr. Daniel, of Bath, seconded the resolution, and was certain the gentlemen who had entertained the meeting with the interesting and gratifying cases which had been read, deserved their most cordial thanks and deep sense of gratitude. (Cheers.)

Mr. Trevor, of Dulverton, then proposed in a neat and complimentary speech—

“That the thanks of this Meeting are eminently due, and that they be hereby tendered, to Drs. Green and Streeten, for the liberal arrangements made by them for the weekly supply of the Provincial Medical and Surgical Journal to the members of the Association.” (Great applause.)

Dr. W. Budd, of Bristol, seconded the resolution, which was carried unanimously.

Mr. James said the Editors had certainly devoted themselves to the cause in a manner which no editors ever did before, and he was glad the members so warmly acknowledged the sacrifices made by Dr. Green and Dr. Streeten.

Dr. Green (who sat at a distant part of the theatre), we understood to say, that he was delighted with the encomiums passed upon him, and that in the same strain as Mr. Newnham had pleaded for the Benevolent

Fund, he wished to do for literary assistance for the Journal, and he hoped that members would not neglect to forward him their communications.

Dr. Black moved the following resolution, and said that the name of Hey (a name dear and esteemed in the minds of all) was a sufficient guarantee for its adoption (cheers.) After a few more remarks as to the fitness of the place and probable reception of the members, he moved—

“That the Anniversary Meeting for the year 1843 take place at Leeds, and that William Hey, Esq. Senior, be appointed President Elect.”

Mr. Bottomly, of Croydon, seconded the resolution, which was put from the chair, and carried unanimously.

The Secretary congratulated the members upon their adoption of the resolution, and assured them that a more numerous requisition had not before been presented to the Association. The present invitation contained about one hundred and twenty signatures of the most eminent in the profession in the North of England.

Dr. Robertson, of Northampton, moved—

“That the thanks of this Meeting be given to the different public bodies in Exeter, who have so handsomely assisted its object by the facilities they have afforded the Association at this Anniversary Meeting.”

Mr. Estlin, of Bristol, seconded the same, which was adopted with cheers.

Mr. James then vacated the chair, which was occupied by—

Dr. Boisragon, of Cheltenham, who said that it now became a pleasing part of the business of that meeting to return their thanks to their president for the dignified and fitting manner in which he had performed the duties that had devolved upon him during the sitting of the members (great cheers). He was certain that all the members were duly sensible of the kindness which had been exhibited by their worthy Chairman in promoting the objects of the Association, and in providing for the comfort of those who had attended (cheers) the meeting (prolonged cheering). He, for one, returned him his thanks, and wished him many days to promote the objects of the Association with equal courtesy and firmness (immense cheering). He proceeded further in a very complimentary manner, and then proposed—

“That the thanks of this Meeting be given to the learned and worthy President, for his unwearied attention to the members, and for his zealous exertions to promote the prosperity of the Association.” (Cheers.)

Dr. Barlow concurred in all that had fallen from Dr. Boisragon, and briefly seconded the resolution.

Mr. James shortly returned thanks. It gave him pleasure if he had in any way contributed to the comfort of the members, and he hoped to sustain the good opinion which they had expressed. He regretted that he had been, from the shortness of time, obliged to cause gentlemen to curtail their papers; but he was sure that his motive had not been misunderstood, but appreciated. It would have given him delight if they could all have been heard at full length, and was glad that his exertions had met their approval. (Great cheering.)

[The meeting broke up about four o'clock, for the Dinner, the report of which, for want of space, we must defer until next week.]

MEDICAL REPRESENTATIVES.

THREE medical men, in addition to those at present in the house, take their seats in the Chamber of Deputies at the present election. They are Prof. Bouilland, M. Dezeimeris, Librarian of the Faculty of Medicine of Paris, and Dr. Ferne, Mayor of Lyons. The medical profession of France look forward to the introduction of some useful measures of reform as a consequence of these elections. The conversion of the Ecole de Médecine into a College of France is among the benefits that are looked for.—*Lancet*.

RECEIVED FOR REVIEW.

A Case of Carcinomatous Stricture of the Rectum, in which the descending Colon was opened in the Loin. By Alfred Jukes, Surgeon to the General Hospital, Birmingham.

Commentaries on the Doctrines of a dangerous tendency in Medicine, and on the general principles of safe practice. By Sir A. Crichton, M.D. F.R.S. &c.

A Practical Treatise on Diseases of the Scalp. By John E. Erichsen, Esq.

Deformities of the Chest and Spine successfully treated by Exercise alone. By C. H. Rogers Harrison, M.R.C.S.

Dr. Mackness on the Climate of Hastings.

Dr. Taylor on the Climate of Pau.

Dr. Cowan's Bedside Manual.

Mr. Markwick's Translation of M. H. Bell's Essay on Diabetes.

Mr. Braithwaite's Retrospect of Medicine and Surgery, No. 5.

APOTHECARIES' HALL.

On Tuesday last the Court of Examiners of the Society of Apothecaries made their Annual Report to the Court of Assistants, from which it appeared that, during the past year, 393 candidates had been examined. Of that number, 330 received certificates of their qualification to practise as apothecaries.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, Aug. 4, 1842.

S. Weston. — I. J. Gillam, Oxford. — R. W. Lammiman, London. — J. B. Steele, Stoke Ferry, Norfolk.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, July 30, 1842.

Small Pox .....	16
Measles .....	18
Scarlatina .....	28
Whooping Cough .....	15
Croup .....	7
Thrush .....	10
Diarrhoea .....	24
Dysentery .....	6
Cholera .....	2
Influenza .....	1
Typhus .....	24
Erysipelas .....	4
Syphilis .....	1
Hydrophobia .....	1
Diseases of the Brain, Nerves, and Senses ..	162
Diseases of the Lungs and other Organs of Respiration .....	227
Diseases of the Heart and Blood-vessels ....	15
Diseases of the Stomach, Liver, and other Organs of Digestion .....	88
Diseases of the Kidneys, &c.....	7
Childbed .....	6
Ovarian Dropsy .....	2
Disease of Uterus, &c. ....	0
Rheumatism .....	0
Diseases of Joints, &c. ....	6
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	0
Diseases of Uncertain Seat .....	123
Old Age or Natural Decay.....	56
Deaths by Violence, Privation, or Intemperance .....	23
Causes not specified .....	7
Deaths from all Causes .....	882

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.

August.		THERMOMETER.	BAROMETER.	
Wednesday	3	from 54 to 76	29.98	to 30.01
Thursday	4	54 78	29.83	29.85
Friday	5	59 75	29.89	29.91
Saturday	6	60 68	29.87	29.90
Sunday	7	54 72	29.92	30.03
Monday	8	50 73	29.97	30.00
Tuesday	9	53 77	30.00	30.02

Wind N. & E. and N. on the 3d and morning of the 4th; S.W. on the 4th and four following days; S. and S. by E. on the 9th.

Generally clear on the 3d and two following days; 6th cloudy, with rain at times; 7th, 8th, and 9th, generally clear.

Rain fallen, 0.6 of an inch.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Varieties of Continued Fever. Its causes, exciting and predisposing. Prophylaxis.*

HAVING traced, in the last lecture, as clear an outline as I could, of the ordinary course and the different terminations of continued fever, I wish to touch, briefly, to-day, on some of its principal varieties; and then to enquire into its causes.

Although fever is, as I have stated, a specific disease, it assumes divers forms; and so dissimilar are some of its phases that they might seem to belong to totally different maladies. These variations relate not only to individual cases, but to whole epidemics. In some places and seasons, the inflammatory type predominates, marked by excitement of the sanguiferous system; in others, depression of the nervous system, characteristic of the typhoid type, is the prominent feature of the disease. Most generally of all, the disorder commences with inflammatory fever, and ends with typhoid symptoms. The distinctions drawn by Cullen, now well nigh obsolete, were founded in nature. To the inflammatory form he gives the name of *synocha*, which he thus defines—"Calor plurimum auctus; pulsus frequens, validus, et durus; urina rubra; sensorii functiones parum turbatæ." With this he contrasts his *typhus*. "Calor parum auctus; pulsus parvus, debilis, plerumque frequens; urina parum sordida; sensorii functiones plurimum turbatæ; vires multum imminutæ." These forms I would have you bear in mind: not that you are likely to meet with many instances of pure synocha, nor of pure typhus, but because they furnish standards

of comparison, towards which, in opposite directions, the fevers of different epidemics approach. The most usual variety of continued fever is represented by the *synochus* of the same author, which is a compound of the two others. "*Febris ex synocha et typho composita: initio synocha, progressu et versus finem typhus.*" The unsoundness of many of Cullen's theories, and the conceit of later and far inferior writers, have thrown his *First Lines* into undeserved neglect; but his clear, succinct, and faithful pictures of disease, will not easily be surpassed; and are worthy of your attentive study.

The difference is very striking between the kind of fever that I witnessed in London for ten years before the arrival of the spasmodic cholera in this country, and the kind of fever that has since prevailed, and is (1838) now so rife around us. During the first of these periods, the antiphlogistic regimen was indispensable in the outset of the disease; in most instances, bleeding, either general or topical, was required, and well borne; there was no eruption to be seen upon the skin; the glands of Peyer, according to my own experience of the fatal cases, were almost invariably affected; and the mortality was very moderate. This was an inflammatory phase. The present epidemic offers a marked contrast in all these points. A large percentage of those who contract the fever die; after death we seldom detect any disease of the agminate glands of the intestine; the peculiar rash scarcely ever fails to shew itself; we are taught by experience to refrain as much as possible from blood-letting; and almost from the beginning, or quite, we find it necessary to sustain our patients by a liberal allowance of strong animal broths. The typhoid is now the prevailing type. You might, I say, almost suppose that I have been speaking of two distinct maladies. But during each of the periods in question, some scattered cases have occurred, bearing most of the characters proper to the other period. Moreover,

all acute diseases have assumed, within the last ten years, in this town at least, an unusually *asthenic* character. So that the differences observed in the aspect and phenomena of continued fever, depend more, I conceive, upon an acquired disposition of the human body, produced by some obscure general influence, and therefore affecting the entire London community, than upon any change in the essential nature of the disease, or in the virus which (as I believe) occasions it.

The inverse relation between the rash, and the intestinal ulceration, is remarkable. When the one is prevalent, the other is rare. It would seem, in conformity with Dr. William Budd's views, that the specific poison displays its elective affinities by settling sometimes upon the mucous glands, sometimes upon the cutaneous tissues, and sometimes by sharing itself, though unequally, between the two.

I have incidentally alluded to the duration of the fever. In this particular, also, there is much variety: a fact which is apparent even to the vulgar, and expressed in their ordinary discourse. They talk of the one-and-twenty day fever, and of the fourteen-day fever, according as the disorder "takes the turn" in three weeks or in a fortnight. It appears from the report made some years ago to the Government, upon the state of fever in Ireland, that the fever there generally began to depart on the 5th day; wherefore it was called, in that part of the kingdom, the five-day fever. Of the fever patients whom I saw in the Edinburgh Infirmary, almost all were fairly convalescent, or dead, before the end of the third week. In this place, the disease runs out longer; lasting three, four, or five weeks. I observed also in Edinburgh that many of those who recovered had a tedious convalescence, in consequence of very troublesome sloughs and ulcers which formed upon the sacrum and hips. In London these bed-sores are comparatively uncommon.

The symptoms attending the fever seem to vary also, *cæteris paribus*, according to the *season of the year*; and the *situation* of the patient: whether, I mean, he is surrounded with pure and cool air, or with a foul and hot atmosphere. In the colder months there is greater risk of inflammatory complications, and especially of pectoral affections: in the autumn we look more for diarrhoea, or for dysenteric complaints, engrafting themselves on the disorder. Where the air is close and foul, the symptoms show a much greater tendency to the typhoid type, and the deaths are more numerous, than when it is pure.

It is of great importance to hold correct notions as to the *exciting cause* of continued fever; respecting which there has been, and

there still is, a perplexing contrariety of opinion among medical men. You are aware, from what has already been stated, that I consider the disorder to originate in an animal poison, and to be contagious; communicable, I mean, from one who is labouring under the disease, to another who is not.

When the same disease attacks many persons in the same house or neighbourhood, at about the same time, the popular suspicion soon arises that the disease is catching. Yet you know that disorders may be widely prevalent without being contagious. Agues, for example, engendered by malaria; ordinary catarrhs and sore throats, produced by vicissitudes of the weather. When an epidemic malady affects large masses of the people suddenly and at once, it is presumably not contagious; at any rate it must have some other source besides contagion. When, on the contrary, it begins in a certain spot, and gradually spreads thence as from a centre, the presumption is in favour of its propagation from person to person. In investigating this subject, if we trace the fever among persons who have had intercourse with the sick, and more frequently in proportion as that intercourse has been close and continued; and if we find that other persons, living in the same place, and in precisely the same circumstances, except that they have had no known communication with the sick, do escape the fever; we have in these facts convincing evidence that the disease has been spread by such intercourse; in one word, that it is contagious.

Have we, then, facts of these kinds? We have, in the amplest abundance.

We find, even in hospitals, where cleanliness and ventilation are prized and enforced, that fever attacks many of the persons who come most often and most intimately in contact with those already ill of that disease; chiefly the nurses, next the clinical assistants and the most assiduous of the students, and the medical officers; rarely the other patients, even in the same ward. The separation of a few feet, if due regard be had to ventilation, is sufficient to render the poison inoperative, by diluting and diffusing it in the surrounding purer atmosphere. Three of our nurses in the Middlesex Hospital have fallen ill of fever during the epidemic now prevailing; and two of the three have died. I am now attending a pupil of the Charing Cross Hospital, who is persuaded that he caught the fever from some bad cases of it which he had been watching there. It is only when our wards are unusually full of fever patients that these disasters occur: but they happen very often indeed, constituting the rule rather than the exception, wherever many fever-patients are collected together: as in hospitals which are exclusively appropriated to their reception,



or in the fever wards of certain general hospitals. In such places the effluvia which proceed from the bodies of the sick are, in spite of all care, the most abundant and the most concentrated.

Dr. Welch, whose book I have referred to before, has the following statement in point. "In this hospital (that is, Queensbury House in Edinburgh, which was opened for the sole use of fever patients during the prevalence of a severe epidemic in that city in the years 1817, 18, and 19) since it was opened (which was the year before the time when Dr. Welch was writing) my friends, Messrs. Stephenson and Christison, the matron, two apothecaries in succession, the shop-boy, washerwoman, and thirty-eight nurses, have been infected; and four of the nurses have died. With the exception of but two or three nurses, who have been but a short time in the hospital, I am now the only person who has *not* caught the disease, either here, or at the infirmary, within the last eight or ten months."

I may quote a passage from Dr. Alison, in illustration of the same thing. He is speaking of a more recent epidemic, which occurred in Edinburgh in 1827 and 1828. He says: "During this epidemic, as well as in that of 1817-19, many of the clerks and nurses employed in the Royal Infirmary have taken fever. Since November last, six of the clerks employed in the clinical wards only, four of those employed in the ordinary wards, and twenty-five nurses or servants, have taken fever. All these persons had necessarily frequent and close intercourse with the fever patients in the house, having been employed more or less constantly in the fever wards, excepting only four of the servants. Of these four two had been employed in the laundry where the linen from the fever wards was washed; one was a porter employed at the gate, who would of course have communication with the fever patients at their entrance or dismissal, as well as with their relations coming to visit them; and one was a nurse employed in the servant's ward, but who was in the habit of visiting the fever wards." Now mark the contrast. He adds, that "in this very place and season, those of its inhabitants who have *not* had intercourse with fever patients have almost uniformly escaped the disease. Of the inhabitants of the *ground floor* of the house, (including patients in the lock-ward) none but those already mentioned as having washed the linen from the fever wards, and the barber who shaved the heads of the fever patients, have taken the disease. Yet in the case of malaria" (to which I must apprise you that many medical men of great authority ascribe the occurrence of continued fever) "it is the ground floor of the house that is generally found the most dangerous. No one of the nurses, whose duty has con-

fined them to the medical or surgical wards where no fever patients were admitted, has taken fever, with the single exception of the woman in the servant's ward above mentioned. And of the numerous *patients* in these ordinary wards, the only one who has taken the fever, within my knowledge, during the present year, was a patient in the men's general clinical ward, who lay in the bed next the door that communicates with the clinical fever ward. If there be *malaria* in this house, therefore, it would seem to restrict itself in *point of space*, as at Queensbury House in *point of time*, to the immediate vicinity of fever patients." To understand this last remark you should know that, in ordinary years, the inmates of Queensbury House escaped fever.

We have similar testimony nearer home; in this metropolis. "Every physician connected with the London Fever House, with one exception (writes Dr. Tweedie), has been attacked with fever; and three out of eight have died of it. Also the resident medical officers, matrons, porters, laundresses, domestic servants not connected with the wards, and every female who has performed the duties of nurse, have, one and all, invariably, been the subjects of fever. And to show that the disease is capable of being engendered by fomites, or clothes, the laundresses, whose duty it is to wash the patients' clothes, are so invariably attacked with fever, that few women will undertake the loathsome and disgusting office."

Now it is in vain to attempt to escape from this kind of evidence, by saying that the situation of the Fever Hospital is infested with some local miasm; for the inmates of the Small-pox Hospital, which is immediately adjacent to it, are not affected in this way with continued fever, but remarkably exempt from it, as Dr. Gregory testifies.

Evidence of a somewhat different kind, but leading to the same conclusion, is to be found in the fact, that when persons, having the fever upon them, are transferred to some distant spot that was previously free from fever, they frequently form centres from which the disease begins, thenceforward, to spread. It is imparted, in this way, from family to family, and from village to village, even in the country.

I was summoned home from Edinburgh on account of my mother's serious illness with continued fever. She was living in a village where there was little or no fever prevailing. While she was recovering my sister took the disease, and had it severely. It had evidently been introduced into the house by a man-servant, whose family lived in a neighbouring village. This family had the disease raging in their house, and he was in the habit of going there occasionally, and

always of sending his linen to be washed there. He first, in our house, had the disorder. then two of the maid-servants, and next my mother.

The cook of Trinity College, Cambridge, who lived in a street called the Petty Cury, had a daughter in London who fell ill with continued fever, and who insisted upon going home. At that time there probably was no case of fever in Cambridge: certainly none in the Petty Cury, as Dr. Haviland (who gave me the account) satisfied himself by enquiry. The girl was very ill indeed after she reached her father's house; but she ultimately recovered. Every inhabitant of that house, except an old, seasoned nurse, became affected with the fever; and three or four of them died. But no fever existed in the other houses of the same street. When one of the sick persons was convalescent, it was thought her recovery might be accelerated if she were put into a lodging at Trumpington, a small village two or three miles from Cambridge, in which there certainly was then no fever. Here she and the old nurse were waited on by a servant belonging to the Trumpington House. That servant soon sickened of the fever, and was sent to Addenbrook's Hospital, where she died.

Take one more instance, to the same effect, related by Dr. Alison: — "Some years ago, at a time when there was no great number of fever cases in Edinburgh, I met with a case in the son of a shoemaker, who was lying in a room in which his father and two apprentices were at work. I could not prevail upon the father to remove his son to the hospital, although I stated the danger of the apprentices being affected. Within two or three weeks after, I found that the two apprentices were lying ill of fever in their own houses: one of them two hundred yards, the other half a mile distant from the workshop, and widely distant from each other. These young men likewise lay at home during the fever; and each of their cases was speedily followed by a succession of others in the inhabitants of the rooms which they occupied, and of those immediately adjoining, who had never been at the workshop. In one of these houses seven, and in the other twelve, were thus affected. Now on the supposition of the fever being contagious, all this was to be expected, and all corresponded to the predictions which were hazarded on that belief. But on the supposition of such succession of fever cases depending on miasmata, there must have been at least two, more probably three, separate and accidentally concurring miasmata to explain the phenomena here observed; one at the workshop, and one at each of the houses of the apprentices: and there must have been this extraordinary

coincidence, that at each of these last the malaria sprung up just at a time when a patient was lying ill there of fever, which he had apparently contracted elsewhere. Farther, the three houses in which these successions of fever cases were observed are in situations very different from one another; and all of them have been, to my knowledge, perfectly free from fever for years together, both before and since that time, notwithstanding that fever has been much more generally prevalent, and that they have been inhabited by successive families. What probability is there (continues Dr. Alison) that three separate miasmata should have arisen in these three houses, just at the time when their presence was required in each to produce an effect which had been foretold as the consequence of another cause undeniably operating on all?"

If we contrast facts, such as I have been advancing, with other cases, in which all the circumstances appear to have been precisely the same, *except* the presence of the alleged cause of the disease—making our observations always upon as large a scale as possible—we approach, as nearly as the subject will admit of, to a demonstrative proof that continued fever spreads by contagion.

The reports which were made by the accredited physicians, to a committee of the House of Commons, respecting epidemic fever in Ireland, contain abundant and valuable evidence on this point also. Dr. Cheyne states that the farmers and householders in some parts of Wicklow, who would not harbour or admit into their houses strolling persons, nor go to wakes nor funerals, remained free from the disease. In Ballytore a committee was formed of persons who took pains to instruct the inhabitants as to the precautions to be observed against infection: such as refusing admission to wandering beggars, absenting themselves from wakes and other assemblies; and even, under certain circumstances, from places of worship. These precautions were so effectual that not a case of fever occurred. Four villages in the neighbourhood of Lismore are stated by Dr. Barker to have been preserved from the fever, chiefly by the exertions of some Roman Catholic clergymen, who persuaded the inhabitants to avoid all communication with Lismore, and with another town in its vicinity, where the fever was rife.

It was observed also that bodies of persons collected together, and fenced about by barriers which precluded intercourse between them and places infected with the fever, remained exempt from it; children in charity schools, soldiers in barracks, and even prisoners in the jails. In the same parliamentary report you may see a letter from Dr. M'Donald, who had established a fever

hospital at Belfast, which hospital alone at one period contained 190 cases of typhus. Very near the hospital was a school, containing 700 or 800 young persons; a poor-house, with 300 inmates; and a barrack with 1000 soldiers. These places were never more free from fever than at that time.

Facts to the same purpose abound in the medical reports of the army and navy. Those of the navy are especially valuable and instructive in this matter, because the whole of the circumstances in which the patients are placed come under the certain and immediate cognizance of the medical officers superintending them. I cannot go into particulars here, but must content myself with referring you to the writings of Dr. Lind, Sir Gilbert Blane, and Dr. Trotter. You will there find that ships which had, for a great length of time, been quite free from fever, have had that disease spread rapidly from one individual, recently imported, so as to affect almost all the crew. This was often the case when raw recruits were drafted from the receiving ships. It appears, from reports made to Dr. Trotter by different naval surgeons, and published in his *Medicina Nautica*, that the fever was conveyed to a great number of vessels forming the Channel Fleet, from the receiving ship called the *Cambridge*.

It is, moreover, found, that when persons ill of fever are taken away from their own close and crowded houses, and when means of purification are employed, the fever ceases to spread in those houses. This well-ascertained fact it is which gives to fever hospitals their greatest, nay almost their only value. They would otherwise, as we have already seen, be detrimental or dangerous to all concerned with them, by concentrating the poison that produces the fever; without equivalent benefit. As it is, they cause, indeed, a certain amount of disease and of death; but by clearing an infected neighbourhood of the seeds of the fever, and by so preventing its diffusion among a large and healthy community, they save many more lives than they sacrifice.

You may be surprised that I should appear to labour this point; and should take so much pains to prove what may seem to you, as I confess it seems to me, to be an undeniable proposition. But I do so because many have denied, and do still deny it; and plausible reasons are given, by men of name and character, for discarding altogether the notion of continued fever being propagated by contagion. Some even, who have begun by expressing their belief that the disorder was contagious, have ended by becoming strong, aye violent anticontagionists. The late Dr. Armstrong was one of these; and there are living men, of high and deserved

repute, both in this country and abroad, who hold what I cannot help thinking erroneous—and if erroneous, then manifestly dangerous—opinions on this subject. Chomel informs us that not one in a hundred of the profession in Paris believe that typhoid fever is a communicable disease. Upon a subject so important it is right that you should be furnished with data for forming a correct and settled judgment. But I scarcely expect that the facts I have now brought forward will carry the same conviction to you all; for I agree with Dr. Christison in believing that the discrepancy which exists upon this, as upon some other controverted questions, depends, in part, upon the different constitution of men's minds, and their peculiar habits of thought. Most of the anticontagionists whom I have known have belonged to that party in this country which advocates what are called liberal opinions in politics and in religion. If this should prove to be generally true, it must be regarded as a curious psychological fact.

I have laid before you some of the positive evidence which goes to prove the contagiousness of continued fever. You may naturally ask, and it is but fair that I should tell you, what are the arguments on the other side of the question.

First, then, it is asserted that continued fever cannot be contagious, because some, nay many persons, who *have* intercourse with the sick, do not contract the disease.

But the force of this reasoning is completely broken by the well-known fact that, in respect to diseases which are on all hands acknowledged to be contagious, and which are even propagable by inoculation, small-pox for example, the same kind of exemption notoriously happens. Some of those who so escape may have had the fever before; and have thereby become less capable of being reinfected by the poison. I believe it to be uncommon for a person to have genuine continued fever a second time, unless he is exposed to the contagious matter in a very concentrated state, or for a long time together. Some may, by original peculiarity of constitution, be proof against its power; but probably, in most cases, the immunity arises from the circumstance that the person has been fortunate enough, or careful enough, to escape imbibing an effective dose of the poison. You may breathe, for a good while, without much hazard, an atmosphere but faintly imbued with the contagious effluvia; and you may, though with somewhat more of hazard, breathe, for a short time, air which is strongly tainted by them, and yet go free.

This argument, that the fever cannot be contagious because many of those who come near the sick are not affected with it, has been happily ridiculed by comparing an epi-

demic to a battle. A man might say, "I was in the battle of Waterloo, and saw many men around me fall down, and die, and it was said that they were struck down by musket balls; but I know better than that, for I was there all the time, and so were many of my friends, and we never were hit by any musket balls. Musket balls, therefore, could not have been the cause of the deaths we witnessed." And if, like contagion, they were not palpable to the senses, such a person might go on to affirm that no proof existed of there being any such things as musket balls.

It must not be forgotten that this same argument, whatever may be its validity, is equally potent against any other general cause: against local miasms; against an undefined something in the air.

Again, the disorder does not spread, say they, in the houses of the rich; but why should it not do so, if it proceeds from any cause which strict attention to cleanliness and ventilation does not disarm? The fact, when rightly considered, is a strong circumstance in favour of contagion.

But then the disorder often occurs when we can trace no contagion: and the full answer to this argument is to be found in the fact that the same difficulty applies to diseases which are not only confessedly contagious, but which are believed to have, now, no other source than contagion; even, as I showed you before, to small-pox. All that the argument can amount to, is a presumption that the distemper may sometimes originate independently of contagion. A person may be exposed to the agency of the contagious matter quite unconsciously, by coming into contact with fomites, or by approaching another person who is just convalescent from the disease. A nobleman died here, in the prime of life, last year, of scarlet fever. The story goes that he had just come to town, and was dining out, and by his side sat a young lady who had just recovered from that complaint; and that from her he unwittingly received it. In such a place as this there are a thousand unsuspected ways in which contagion may be disseminated. It may lurk in a hackney coach; you may catch it from your neighbour in an omnibus, or at the theatre, or at church; your linen may be impregnated with the subtle poison in the house of your laundress; or your coat may convey it from the workshop of your tailor. So that, when continued fever occurs, it is very difficult indeed to be *sure* that it has not arisen from contagion; and it becomes a very interesting question whether the disease ever proceeds from any other cause. It is, however, of primary importance to determine whether it is, or is not, communicable. By our belief

in this matter the lives of our neighbours and clients may be saved, or lost. Even if we *doubt* about the contagiousness of the disease, we are bound to *act* as if we had no doubt upon the subject; and I would admonish you (although that is a lower and poorer motive) that your own reputation and success may be endangered by mistakes in this very thing. I have been told of one instance, which may serve as a warning. A lady came from the country to London, to see a sister, who was ill of fever. She asked the medical attendant if there was any danger of infection. He happened to be a staunch non-contagionist; and he said "no danger whatever." Upon the faith of that assurance, the lady resolved to sit up with, and to nurse her sister; but she fell sick herself of the disease, and died. I believe this did not shake the medical man's opinion. He attributed the mischance to some local miasm. But he could not persuade the lady's friends of this: they maintained that her death lay at his door; and whether they were right or wrong, the affair was so much talked of, and was so injurious to him, that he was obliged to leave that part of the town, and to seek for practice elsewhere.

Many sporadic cases occur of febrile disorder, which do not belong to the category of continued fevers, and yet are liable to be confounded with them. All the phlegmasiæ are attended with pyrexia, and the local inflammation may be slight, or very obscurely marked, and easily overlooked: but the febrile symptoms are much the same as those which constitute the more *inflammatory* forms of continued fever. In like manner severe bodily injuries, compound fractures for example, sometimes give rise to constitutional symptoms precisely resembling the most prominent phenomena of its *typhoid* forms. Excluding all such spurious resemblances of the genuine disease, I confess my own opinion to be, that continued fever, like small-pox and measles, originates, in all cases, from a specific poison. With respect to all these disorders, I conceive that, in every large community, there is constantly kept up a sufficient stock of contagious matter, to act as a sort of leaven, whenever circumstances favourable to the development of the disease, as an epidemic, may chance to arise.

Continued fever has been ascribed, by those who deny its origin in contagion, to certain other causes; some of which demand attention, not merely on account of the interest that belongs to the whole inquiry, but also because they really are important agents in the extension of the disease.

First, then, it was, and is, a common belief, that continued fever may be *generated* by the effluvia constantly proceeding from



the human body, even when healthy, if these effluvia are accumulated and condensed by the crowding together of many persons in close, dirty, and ill-ventilated places. It is unquestionable that, when once introduced, the disease spreads, under such circumstances, with fearful rapidity; but the point at issue is whether it is ever so caused *de novo*. I must refer you, for good evidence that it is not so engendered, to Dr. Bancroft's book on the yellow fever. He shows that typhus fever does not spring up in places where it could scarcely fail to appear if that theory were true. He instances the natives of the arctic regions, who, in order to shelter themselves against the extreme cold of their climate, live during the greater part of the year in close subterraneous dwellings, from which the fresh air is studiously excluded, and of which the atmosphere becomes so offensively foul as to be scarcely supportable by a stranger: yet continued fever is not known among them. A similar exemption from that disease is observed within the tropics, in the African slave ships, where "the poor wretches are crowded together below the deck, as close as they can possibly lie, in a sultry climate, barred down with iron to prevent insurrection." Although many of them die from suffocation, and from fluxes, yet Dr. Trotter, who was himself, at one time, surgeon to a slave ship, declares that "contagious fevers are not their diseases." Dr. Bancroft quotes also a narrative of the sufferings of 193 Europeans, who, during the time of the French revolution, were "deported" to Cayenne, in the *Decade* frigate. They were crowded, and even squeezed together, in so small a space, and for so long a time, that the sentinels, who were placed at the hatchways to guard them, and who were thus exposed to the hot and fetid air which came from their hole of confinement, demanded that their period of offensive duty might be shortened. Yet none of these miserable persons perished, nor did fever, properly so called, arise among them. Neither did that distemper present itself in any of the survivors of the black hole at Calcutta; the frightful account of which, by one of those survivors, Mr. Howell, is abstracted in an appendix to Dr. Bancroft's work.

Fever used to infest our English jails; but that it was always imported, and never engendered there by filth and defective ventilation, and the accumulation of human effluvia, may be concluded from the fact that the benevolent Howard, when he visited the prisons on the continent, found, to his great surprise, that they were free from fever, although they were no less close, crowded, and impure than our own. He brings the result of his observations and en-

quiries concerning the cause of the jail-fever to this pointed conclusion:—"If it were asked," says he, "what is the cause of the jail-fever, it would in general be readily replied, the want of fresh air and cleanliness; but as I have found in some prisons abroad, cells and dungeons as offensive and dirty as any I have observed in this country, where, however, this distemper was unknown, I am obliged to look out for some *additional cause* for its production"—which additional cause can be no other than the contagious poison emanating from the bodies of those who have the fever. It is true that fever is most frequently met with, and most rapidly propagated, where men are crowded together, in jails, or in close and ill ventilated places: but this affords no reason for supposing that it is ever *generated* there, any more (to use a homely illustration of Dr. Bancroft's) than the general prevalence of lice and other parasitic vermin in such places, proves that these vermin are *generated* by filth, by pent-up human effluvia, and want of ventilation, instead of being merely *fostered* thereby.

Again, continued fever has been attributed, with great confidence, to a vitiated state of the air, from the putrefaction of *dead* animal and vegetable substances. Dr. Bancroft deals with and demolishes this error also; shewing that neither the putrid atmosphere of dissecting-rooms (respecting which you must have some personal experience), nor the noisome effluvia from full and ill-conducted burial-grounds, nor those to which tallow-chandlers, soap-boilers, glue and cat-gut makers, and the melters of whale-blubber, are exposed, nor the foul air of sewers and privies, have ever been known to produce any thing like continued fever. In some parts of Essex, near the coast, where the farmers are in the habit of manuring their fields with shoals of sprats, I have seen large tracts covered with these fish in a state of putrefaction. The stench they occasion is horrible; but no disease results. Dr. Chisholm, in a paper to which I can only refer, but which I would recommend you to look at, in the sixth volume of the *Edinburgh Medical and Surgical Journal*, brings forward other, and very satisfactory, instances, to the same purpose: from a bone manufactory, near Bitton, in Gloucestershire; from an establishment (now relinquished) on the banks of the Avon, for converting the flesh of dead animals into adipocire; from manufactories for refining sugar, where the blood of slaughtered animals is kept for that use by butchers; from the leather-dressing business;—all tending, I say, to the conclusion, that air, contaminated by the decomposition of animal substances, is not necessarily noxious to



life; still less productive of that specific disease which we are now considering. The old belief, therefore, was unfounded, that the exhalations from the dead and putrefying bodies of men and horses, lying unburied on the field of battle, are capable of producing a pestilence. Many instances to the contrary are on record: one, of an early date, is thus stated by *Diemerbroeck*:—"Anno 1642, in agro Juliacensi maxima strages facta est, et ad minimum 8000 militum occisa fuerunt, præter majorem adhuc famulorum, &c. numerum: corpora inhumata sub dio computruerunt, nulla tamen pestis insecuta est."

It has been said that fever is produced by some unknown condition of the air, imperceptible by our senses, but distinct from contagion. I believe this is a very popular notion; but it is perfectly gratuitous and untenable, and inconsistent with observed facts. You may have fever raging in certain parts of a town, and yet the parts in the immediate vicinity of these be quite exempt from it. Now this could hardly be, if there was some general property diffused through the atmosphere capable of engendering continued fever: and, as I stated before, this notion is severely pressed by one of the arguments which the non-contagionists themselves are fond of employing. If the disease depends upon contagion, some persons in the community may come less near the sick, or imbibe a less dose of the contagious poison, than others, and so escape: but if the cause of fever were spread abroad throughout the whole atmosphere, *all* must be exposed to its influence, and few, we may suppose, could avoid suffering from its operation.

Exposure to cold is another cause to which fever has been sometimes attributed. But this is an agency so widely prevalent, that if it alone could excite fever, that complaint would be far more general than it really is, and we should be able to trace it oftener and more distinctly than we can, to the alleged cause. That by its debilitating effect cold will predispose the body to be affected by the contagion of fever, I well believe: and the same remark is applicable to another cause that has been assigned; namely, deficiency of nourishment. Dr. Alison, in his admirable essay *On the Management of the Poor in Scotland*, has clearly proved that the prevalence of contagious fever amongst the lower orders is always in direct proportion to their state of physical destitution. The association of pestilence with famine is proverbial. But we do not find that continued fever is ever created by the mere want of nutriment. In persons who have sought to starve themselves to death—among sailors who have of

necessity been kept upon very short allowances of food—in cases of insulation by snow storms, or by the accidental closure of a mine—we find, indeed, that disease is produced by the privation of nourishment; but it is not continued fever. The condition into which the sufferers are brought is more like scurvy. So that although a want of sufficient aliment may be, and doubtless is, a powerful auxiliary in promoting the effect of the contagious poison, there is no ground for supposing that it ever primarily or solely occasions fever.

In fact, all the circumstances which I have now been considering act as *predisposing* causes. They render the human body an easier prey to the true *exciting* cause, which is a specific animal poison. You will remark that they are all *debilitating* circumstances; and where several of them co-exist, their joint influence in subduing the system, and bringing it into subjection to the contagion, is very great. For the same reason, depression of spirits, however produced, has a strong predisposing effect; as strong, perhaps, as any other single cause. Of this I have seen, if I mistake not, some remarkable examples. It is upon this principle that we may explain the fact, that continued fever is apt to attack those of the lower classes who have recently come to reside in the metropolis; who are often living anxiously, and with persons to whom they were not previously known. We have had numerous opportunities, in the hospital, of noticing this curious circumstance: and it is mentioned by almost all the French writers on fever. To the same principle also we must attribute the tendency to fall down in fever, observed in young soldiers and sailors. You will find statements to that effect in Dr. Trotter's works, and in those of Dr. Lind and of Sir Gilbert Blane. When fever appears in a ship, the raw sailors are always the soonest attacked by it; and it is the same with the recruits in the land service. In a defeated, dispirited, or retreating army, its ravages are often frightful. Here we have combined, fatigue, a deficiency of wholesome food, and mental depression.

You must, I think, perceive the importance of distinguishing between the one exciting cause and the many predisposing causes of fever. The latter are generally beyond our control. We cannot hope to remedy extensive destitution; nor to separate it effectually from its concomitants of filth, and despondency of mind. But we may, by timely diligence, root out the specific contagion, or confine it within narrow bounds. When the sick can be at once removed from their crowded homes to a fever hospital, and their impure apartments ventilated, cleansed, and whitewashed, the dis-

ease may often be kept in check, if not entirely stopped; and the yet healthy persons of the infected district be preserved from its grasp. For, as I stated before, there is reason to believe that the poison, unless pent up, does not remain active at any great distance from the person from whom it proceeds; not even many yards, or feet. It is very rare, I apprehend, to meet with instances of the disease being communicated in the open air. It is almost always caught, if at all, in the interior of houses. It is extremely uncommon for it to extend from one bed to another in our general hospitals, where great attention is paid to cleanliness and ventilation. The noxious qualities of the poison are diminished, and at length destroyed, by its dilution with common air, just as those of other gaseous poisons are: and hence, in private houses, in the better ranks of society, where the rooms are spacious and airy, and proper precautions are taken, the disease hardly ever spreads.

What are those proper precautions? They are simple, and may be stated in a very few words.

Where choice can be made, a large apartment should be selected for the sick person. Unless the weather be very hot, there should be a fire in the room, for it acts as a ventilator. The air of the chamber should be kept fresh by having a window, or a door (according to the weather) always open; or both window and door. Bed and window curtains, and all superfluous articles of furniture, should be removed. Great diligence should be used in keeping the patient clean, by the requisite ablutions, and by frequently changing his sheets and his body linen; and these should be immersed at once in water: and all discharges from the sick person's body should be instantly carried out of the room.

All unnecessary intercourse with the patient, by his family and friends, should, for his sake, as well as for theirs, be avoided. As life advances, the susceptibility of the disease appears to diminish; for which reason the nurses and personal attendants of the patient should not be very young: and all who do approach the sick bed should take care to avoid, as much as possible, inhaling the patient's breath, or the emanations which proceed from his person.

And you may, if you please, employ the chloride of lime as a disinfecting agent, in aid of the simple measures I have just recommended; but by no means *instead* of them.

I shall speak of the *treatment* of continued fever when we next meet.

## RESEARCHES INTO THE NATURE OF CERTAIN FREQUENT FORMS OF DISEASE

CHARACTERIZED BY THE PRESENCE OF  
OXALATE OF LIME IN THE URINE.

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[Concluded from p. 754.]

**CASE III.**—*Intense lumbar pain following exposure to cold; diuresis; great hypochondriasis; copious discharge of oxalate of lime following, and succeeded by uric acid gravel; excess of urea.*

Mr. F——, æt. 53, a gentleman residing in the neighbourhood, came under my care May 1st, 1842, complaining of intense pain across the loins, so severe as to interfere materially with his comfort. From his history it appears that the general health had been good; always had an excellent, indeed often a voracious appetite, and been "a heavy feeder," eating and drinking abundantly, but scarcely ever has been intoxicated. His life has been one of great activity, being daily for several hours out on horseback or in his gig. Ten years ago he became the subject of severe irritative dyspepsia, lasting about six months: from this he recovered, and remained tolerably well for four years, when he suffered a relapse, attended with severe pain in the left hypochondrium, referred to flatulent distension of the colon, consequent on constipation, by the late Mr. Vance, under whose care he then was. This pain has since been always more or less constantly present, and is generally relieved by an escape of flatus. About five years ago he went to Cheltenham on the outside of a coach, and got chilled. He soon became the subject of severe lumbar pain, which, although frequently varying much in severity, has now left him. It is greatly increased by all indiscretions in diet, and when absent a hearty meal will at any time bring it on: when it is present it completely cripples him. By making a powerful effort he can sometimes manage to walk: and this generally gives some amount of relief, although

too much exercise will always bring it on. He feels no increase of pain when riding on horseback, but a short drive on a coach will bring on a paroxysm of lumbar pain. Neither headache nor sickness have been present during the whole illness. The urine is generally turbid, and occasionally passed in larger quantity than natural. This gentleman has of late become subject to the most distressing hypochondriasis, looking at all occurrences as tinted with a colouring of melancholy or misfortune. So far as I could learn, the sexual powers had not become materially impaired. He has never had pains along the ureters, and inherits no tendency to calculus or gout. The tongue is tolerably clean; having in its centre a mere creamy layer. The bowels act well.

May 1st. — The urine passed last night was pale amber-coloured; it contained much mucus, was acid, did not coagulate by heat; it contained in diffusion a large quantity of urate of ammonia, which, on the application of heat, dissolved, and left a copious deposit of lozenges of uric acid, mixed with cohering crystals of that substance in the form of crystalline gravel: its specific gravity was 1·026: it did not coagulate by heat, but contained an excess of urea: on the addition of nitric acid, it in a few seconds became filled with fine crystals of nitrate of urea.

The urine passed this morning was of specific gravity 1·024, and in other respects resembled the night urine.

R. Hyd. c. Cretà, gr. iss.; Ipecac. Pulv. g. j. ft. pilula o. n. s.

Omit all beer and spirits, as well as fatty and indigestible articles of food. Plain diet with animal food once daily.

8th.—Much the same; the bowels had acted with copious bilious discharges; pain still intense; depression very great. The urine passed last night was of specific gravity 1·030; it was acid, pale, contained abundance of urate of ammonia, which, by heat, disappeared, leaving, distinctly visible under the microscope, a copious deposit of oxalate of lime in minute cubes, mixed with an abundance of nucleated epithelium: no uric acid. On the addition of nitric acid, the urine almost immediately solidified from the copious crystallization of nitrate of urea.

The morning urine was of specific gravity 1·027. It contained a great excess of urea, and resembled the night urine in every particular, except that the urate of ammonia was tinted with pink, and the crystals of oxalate of lime were much larger, being fine octahedra.

R. Acidi Nitrici, ℥iij.; Acidi Hydrochloric. ℥vj. ter in die ex cyatho Inf. lupuli, sumend:

9th.—The urine was sent to me; that passed last night was healthy in colour; quite limpid; sp. gr. 1·027. Under the microscope it appeared full of fine octahedra of oxalate of lime. That passed this morning resembled it in every thing, save in its lower specific gravity, being 1·021. Both contained excess of urea.

16th.—Very much improved. He has been quite free from pain for several days; is in excellent spirits. He has taken more exercise, having been out rook-shooting the whole week, and been "living well."

Last night's urine was of sp. gr. 1·022. No visible deposit. Under the microscope a few small octahedra of oxalate of lime, mixed with cylinders of uric acid, were visible. The specimen passed this morning was of sp. gr. 1·017, and contained still few crystals of the oxalate.

23rd.—Appears completely well in health and spirits; is now cheerful, and free from pain. The urine passed this morning contained no oxalate; had a slight deposit of uric acid in lozenges, but was still rather too high in specific gravity, being 1·024.

CASE IV.—*Irritative dyspepsia, gastrorrhæa, great emaciation and depression, voracious appetite, copious deposit of oxalate of lime in large and well-defined crystals.*

Mary Wardell, ætat. 35, admitted under my care at the Islington Dispensary, April 26, 1842: a pallid nervous woman; had one child nineteen months ago; suckled it during nine months; previous to this had suffered from four miscarriages, losing at each a large quantity of blood; has no leucorrhæa. Previous to her first pregnancy her health had been excellent. During the last year she has been rapidly losing flesh, and her energies are almost prostrate, the spirits being intensely depressed. She has, for a long period,

suffered from pain at the scrobiculus cordis, and gastrorrhœa. For several months her most serious evil has been a fixed persistent pain across the loins, which becomes much more intense by exertion. No evidence of uterine disease; bowels constipated; appetite craving, and distressing, never being satisfied; thirst great; flatus considerable.

26th.—Shortly after each meal a gush of limpid fluid rises from the stomach, which, in about an hour after, is followed by the vomiting of the meal in a semi-digested state, mixed with a considerable quantity of black grumous matter; bowels confined.

Pil. Col. c. Hyd. ℥ss. o. n. s.

30th.—Bowels freely open; vomiting considerable and distressing, accompanied with great pain at the epigastrium.

Pil. Cal. c. Opii, j.; ante prandium quotidie M.M. c. M.S. ℥ss. c.; Acid Hydrocyan. dil. ℥viiij. t. d.

May 5.—Bowels freely open; vomiting not so frequent; complains of severe pain, referred to the right side of the chest.

Rep. Mist.

℞ Bismuth. Trisnitratis, Conii fol., Sodæ Carbon. aa. g. iv. t. d.

10th.—Was suddenly seized last night with fainting, and severe pain in epigastrium. This was relieved by a little brandy and water. After a short short time sleep came on, and she awoke somewhat relieved. The emaciation has rather rapidly increased during the fortnight. I now requested her to send me a specimen of the urine passed in the evening. It was pale, of sp. gr. 1·030, acid, and turbid from the presence of flesh-coloured urate of ammonia. On exposing a portion to heat, the latter dissolved, and a white opaque deposit was left; this, under the microscope, was found to consist of oval epithelial scales, mixed with very fine and large octahedra of oxalate of lime.

Perstet. in usu pulverum; Ammonizæ Sæqui-carbonatis, gr. iv.; ex Inf. Serpent. ℥j. et Sp. Eth. Sulph. co. ℥ss. ter in die.

11th.—Passed a good night; no pain either in back or epigastrium; much headache; bowels thrice open from a dose of rhubarb she took this

morning; motions offensive; no sickness since yesterday, which followed the eating of a couple of figs; feels comfortable, but weak; urine clear; oxalate of lime not so abundant.

Mist. Effervescens c. Syr. Papav. ℥j. 4tis horis.

12th.—Vomited yesterday after dinner; passed a good night; complained this morning of pain all over the abdomen, and between the scapulæ; bowels acting freely.

Pergat. Fetus Papaveris abdomini.

16th.—Decidedly improving; now can bear on the stomach a slight meal of animal food; complains bitterly of pain across the abdomen, compared to a cord tightly drawn round it.

℞ Sp. Ammon. Co. ℥xx.; Inf. Serpent. ℥j.; Syr. Papav. ℥j. M. ter in die.

21st.—Improving; is gaining flesh and spirits; complains of gastrodynia daily after dinner.

Pergat. Pil. Cal. c. Opii j. bis die.

27th.—Has gained strength enough to walk from Hoxton, where she resides, to my house; is very much better, but still has great lumbar pain. The urine is still of rather too high a density, contains an excess of urea, and a tolerably copious deposit of crystals of oxalate of lime.

℞ Inf. Serpent. ℥j.; Acid Nitrici dil.; Acid. Hydrochlor. aa. ℥v. M. ter die. Allowed to take some porter.

29.h.—Much improved; urine copious, pale, sp. gr. 1·009.

June 7th.—Convalescing; urine 1·019, free from oxalate.

13th.—Has suffered a slight relapse, attended with returns of lumbar pain, following her taking a glass of hard porter. This lasted but a few hours; and she intends leaving town to recruit her strength in the country.

CASE V.—*Emaciation; extreme melancholy, following great mental distress; severe lumbar pain; great excess of urea, and discharge of oxalate of lime; remarkable gelatinization of the urine by heat.*

Catherine Cutler, æt. 39, a tall thin woman, of fair complexion, presenting the appearance of great emaciation and melancholy, admitted under my care at the Islington Dispensary on May 3, 1842. She has been a widow

four years; has had two husbands, and lost both by phthisis; this, with her depressed circumstances, has caused her to experience great mental and bodily distress. She has had eight children, of which she has lost six. Menstruation still regular, but, to use her own expression, almost drowned in leucorrhœa; bowels habitually constipated. She states that she has for two years been gradually losing flesh; but lately this has so increased as to amount to rapid emaciation. Her depression and melancholy are intense, probably, however, partly depending on her being dependent on dress-making as the only means of support. For some months past she has been the subject of almost constant "wearing" pain across the loins, increased by exercise, and so severe at night as often to prevent her lying in the recumbent position. This pain is always increased by exercise. Her nights are usually sleepless; and if she does get a little rest, she starts from it with the most frightful dreams. She has frequent palpitations, and frequent pain about the epigastrium after taking food; no great amount of flatulence; tongue red at the tip and edges, white fur in the centre.

Pil. Col. c. Hyd. ij. o. n. s.; Emp. Belladonnæ regioni cordis.

May 6th.—The urine passed last night was of sp. gr. 1·027, acid, and turbid from its holding much urate of ammonia in diffusion. On decanting the clear portion, and gently heating the opaque part, the urate dissolved, and left a copious deposit of microscopic octahedra of oxalate of lime, and numerous scales of nucleate epithelium. No change was produced in this urine by heat. The specimen passed this morning was of sp. gr. 1·011, very pale, and limpid. It became opaque on the application of heat; the troubling not being removed by nitric acid. It scarcely contained a trace of oxalate of lime. I ordered all medicines to be omitted, for the purpose of watching the state of the urine for a few days.

8th.—Bowels for three days have been confined. She complains of a sense of distension in the abdomen, and has for two days been confined to bed with intense headache, giddiness, and feverish excitement.

Morning urine, clear, 1·028, acid; no oxalate.

Night urine contained a mucous cloud, 1·022, abundance of oxalate of lime in octahedral crystals.

Pil. Cal. c. Hyd. ij.; 6tis horis ad catharsin.

9th.—Last night's urine turbid from the presence of urate of ammonia; feels very weak.

Mist. Gent. Co. ʒj.; c. Sp. Ammon. Co. ℥xx. ter in die.

12th.—Much the same; constipation continues.

Pulv. Jalapæ Co. ʒj, o. m. s.

15th.—No change for the better; bowels have acted well; she still feels wretchedly ill, and depressed.

The urine passed last night was of a density of 1·028, acid, pale, and contained in suspension the fawn-coloured urates. On warming a portion, the urates dissolved, and the clear fluid soon let fall a white deposit, which, on decanting the still warm liquor, and examination under the microscope, was found to consist of various sized octahedra of oxalate of lime, mixed with myriads of oval nucleated epithelial scales. During the application of heat, this urine underwent a remarkable change. It did not become opaque, or coagulate, but assumed a gelatinous consistence, retaining its transparency. It then required violent agitation to diffuse it through water.

The morning urine was of sp. gr. 1·030, contained an abundance of epithelium, but no oxalates. Both specimens were loaded with urea, and were converted into nearly semi-solid crystalline masses on the addition of nitric acid.

I was by no means satisfied upon what this very remarkable gelatinization depended. Certainly not upon the presence of albumen, as nitric acid produced no opacity further than what arose from the rapid production of crystals of nitrate of urea. Nor could I attribute it to the great excess of the latter element, as this change is by no means characteristic of urine containing a large quantity of urea.

Rep. medicamenta.

17th.—Improving; bowels act well, and leucorrhœa decreasing; pulse 24; general health better; the symptoms of uterine irritation have decreased with the leucorrhœa, but the want of strength, emaciation, depression, and



severe lumbar pain, continue; the oxalate of lime still abundant in the night urine.

Capiat Acid. Nitric. Dil. ℥xv.; ex Dec. Cinch. ʒj.; bis die. Ordered nutritious diet, avoiding vegetables and beer, weak gin and water at dinner.

June 1st.—Has been, during the last week, completely free from lumbar pain; this morning, apparently owing to an indiscretion in diet last evening, she had a slight return. The urine passed last night just before going to bed was pale, of specific gravity 1·015, contained abundance of epithelial scales, and no visible oxalate.

Rep. omnia.

5th.—The return of lumbar pain has been evanescent; she is now quite free; complains of debility and occasional headache; still suffers from constipation; skin acts well; occasional feverish flushes, especially in the evening. The urine passed last night had increased in specific gravity to 1·029; it was loaded with pale urates; it contained no oxalate of lime, and, by heat, underwent the remarkable gelatinization before referred to.

Rep. Mistura. Sumet. Pil. Col. c. Hyd. ʒss. p. r. n.

12th.—By taking the pills on alternate nights, a tolerably healthy action of the bowels has been kept up; she is much improved; the flushes are less frequent; no return of lumbar pain; merely complains now of not feeling quite strong.

Inf. Serpentariae, ʒj. t. d. Allowed a little porter.

13th.—The urine passed last night was of a density of 1·028, healthy in colour, contained no visible deposit, save a mucous cloud. The microscope, however, detected a considerable deposit of octahedral crystals of oxalate of lime, with an immense quantity of oval nucleate epithelial scales.

Ordered to omit the porter.

20th.—Feels quite well. The oxalate has again disappeared.

**CASE VI.—Rapid emaciation and depression; nervous palpitations; lumbar pain; excess of urea, and discharge of oxalate of lime.**

John Berry, æt. 31, admitted under my care at the Finsbury Dispensary, June 3, 1842.

A tall and remarkably fine man, extremely emaciated, his cheeks hollow, and his whole appearance resembling that of a diabetic patient. He is a currier, and is exposed to extreme alternations of temperature, working in a half bent position, without coat or waistcoat, in a shop through which are constant currents of air. He is unmarried, and has been very irregular with regard to women; for two years he has been gradually losing flesh, strength, and spirits; his sexual powers have also rapidly declined, and now scarcely exist; he has frequent seminal emissions in his sleep, which leave him weak, exhausted, and melancholy, during the ensuing day. Regarding his previous habits he considers he has been temperate, rarely getting intoxicated more than twice a week, and then on porter or ale. During two months his decline has been rapid—a *facilis descensus*. He has now an almost constant headache, a constant aching pain across the loins, a sense of sinking at the stomach, as if, to use his own expression, he had no inside, frequent chills, with cold and clammy sweats, succeeded by feverish flushes; tongue red at the tip and edges, with a white central fur; frequent giddiness; his memory has been for some time failing. His nights are wretchedly restless, generally tossing all night from side to side, in vain endeavouring to sleep, and if he does slumber, he awakes as fatigued as when he retired to rest; appetite bad; no thirst; frequent palpitation and flatulence; pulse small and irritable; no chest disease.

Sumat. Pulv. Rhæi Salin. ʒj., cras mane.

5th.—Bowels acted once yesterday from the powder; hands tremulous. The urine passed last night was deep amber-coloured, acid, of a density of 1·030, no visible deposit: by microscopic examination, however, myriads of splendid octahedral crystals of oxalate of lime became visible. On the addition of nitric acid to the urine, a copious formation of crystals of nitrate of urea occurred.

The urine passed this morning was paler, acid, of a density of 1·025, and contained less oxalate and urea.

Pil. Col. c. Hyd. ij. o. n. s.; Acid Nitric. dilut. ℥xv. ter die, ex. Dec. Cinchonæ, ʒj. Nutritious diet, light pudding daily, no beer, weak brandy and water at dinner.

15th.—Bowels act thrice daily; motions offensive and dark-coloured; complains greatly of palpitation of the heart.

Rep. Mist. c. Inf. Serpentariæ. loco  
Dec. Cinchonæ.

The urine passed last night was deep amber-coloured, of specific gravity 1·028: the microscope detected myriads of smaller octahedra than before. The morning urine was of a density of 1·018.

28th.—Very much improved; rests better at night; no lumbar pain; great sense of sinking at the scrobiculis cordis. Night urine, 1·026, deposited phosphates by heat, and contained numerous minute crystals of oxalate of lime. Morning urine 1·026, like the night specimen, but did not become opaque by heat.

M. Ferri Co. ℥j.; c. Tr. Lyttæ. ℥x. b. d.

July 2d.—Improving; seminal emissions ceased. Still copious octahedra in the night urine, which is of the density 1·025.

Sumat. Vin. Sem. Colch. ℥xx. ex Mist.  
Gent. Co. ℥j. b. d.

10th.—So much better that he is anxious to leave London on a long journey; the urine is now free from oxalate.

**CASE VII.—Discharge of dumb-bell oxalates, apparently succeeding to mechanical injury.**

David Maneford, æt. 58, admitted under my care May 25, 1842: a pallid-looking man, with a face, although not remarkably attenuated, presenting a gaunt hollow aspect, with a slight hectic flush over each cheek-bone; engaged up to the age of 32 as a ship's carpenter in vessels chiefly in the Mediterranean, and once in a privateer on the American coast: during this time his life was one of great intemperance, drinking rum abundantly. Since he left the navy he has worked as a cabinet-maker. In 1831, whilst lifting a heavy weight, he experienced a "wrench" across the loins, the effects of which injury, although apparently not severe at the time, have ever since, more or less, annoyed him; although his general health, up to the last year, has been tolerably perfect.

His chief ailment now consists in a gradual, but persistent, loss of strength and health during the last twelve months, during which period he has

lived more regularly than previously. He is very low-spirited; his memory has of late become defective; perspires freely on the slightest exertion; has frequent nausea at the sight of food; appetite bad; no pain in the stomach after the meals; no acid or bitter eructations; great and frequent flatulent distension. His nights are wretched and restless. During the last year, a fixed and constant pain across the loins has distressed him; this he can succeed in *walking off* for a time, but fatigue will eventually increase it; the bowels have of late been relaxed, acting three or four times a day, the motions being dark and fluid; his sexual appetite and powers have of late rapidly declined; frequent involuntary emissions appear at night; the tongue is clean, vividly red, and polished at the tip and edges; pulse full and hard, but jerking. The urine passed on the night of May 25th was clear, amber-coloured, acid, of specific gravity 1·017, and contained no visible deposit; a drop of the lower stratum of the urine, after repose, was full of oxalate of lime in dumb-bell crystals, which were hard and somewhat gritty, unaltered by boiling acetic acid, but readily soluble in nitric and hydrochloric acids. The specimen passed in the morning resembled the last; was of the density of 1·012: it let fall a slightly cloudy deposit by repose, which, under the microscope, was found to be made up of myriads of minute cuboid crystals of oxalate, mixed with a very few dumb-bells.

℞. Acidi Hydrochlorici, ℥ij.; Acidi Nitrici, ℥j.; Mist. Camphoræ, ℥iiss.; M. capt. cochl. j.; Min. ex Inf. Anthemidis, ℥iss. ter die.; Sumat. Pil. Hydr. Chlor. Co. gr. v. o. n. He was ordered to wear a flannel bandage round the loins, to keep to a bland nutritious diet, omitting all fermented liquors.

27th.—Night urine clear, amber-coloured, no visible deposit, 1·016, very acid, no opacity by heat: some white pearly granules became visible by repose, which consisted of cohering dumb-bell crystals of oxalate. Morning specimen pale, contained mucous clouds, with some flakes of uric acid mixed with cohering dumb-bells.

June 2d.—Notwithstanding the warm weather he has not perspired so much as usual; bowels act once daily; motions dark, and tolerably healthy; urine less in quantity; that passed at night, 1·019, pale, and had a copious

deposit of cylinders of uric acid, mixed with lozenges and rosettes, nearly free from oxalate of lime. The morning specimen was 1·018 in density, and perfectly resembled that passed at night. He gets better nights' rest; lumbar pain still severe, but altogether feels stronger.

9th.—Tongue not so vividly red; gums slightly affected. Has been drinking cider, which not appearing to disagree, I have permitted him to continue. The night urine is of density 1·024, and contained a copious deposit of uric acid.

Rep. mist., omite pil.

23d.—Improving manifestly in general health; no sickness; bowels act well. Night urine 1·018; morning 1·015; no visible deposit; feels only weak and nervous.

Zinci Sulph. gr. iij.; c. Conf. Opii. g. s.  
formâ pilul. ter die.

30th.—Convalescing; has now only a pain in the back, chiefly confined to the spine, from the first lumbar vertebra to the sacrum; this is not constant, but now comes on after fatigue in the evening; still complains of frequent involuntary seminal emissions at night. He was ordered to continue his zinc, and to have cold water copiously applied in a stream from a kettle over the genitals and loins twice a day.

14, Myddelton Square,  
August 8, 1842.

## SENSIBILITY OF PERSONS SUFFERING FROM ASPHYXIA.

*To the Editor of the Medical Gazette.*

SIR,

As I observe that Dr. Johnson, in his review, last month, of Mr. Jackson's work on Epilepsy, has expressed his doubts respecting the insensibility and want of suffering by persons who are hung or strangled, as asserted by Mr. Jackson, and Dr. Elliotson whom he quotes, I think the following account of an occurrence that happened to myself may prove that Dr. Johnson has good reason for his doubts, and that there is not only sensibility, but some degree of consciousness, during the

state of coma produced by imperfect strangulation.

When a boy, I was very fond of making boyish experiments on my powers of endurance, such as staring at the sun, having two horns blowing at once in my ears, lifting weights, &c.; and one night, having found no ill effects from pinching my windpipe between my finger and thumb, I dared another boy to strangle me with his handkerchief. He complied with my bravado, but the moment he had tied the handkerchief tight I fell backwards, striking my head against the bed-post in the fall. How long I lay I could not tell, but I perfectly-well remember feeling an acute pain from the blow, and a tingling sensation about my neck from the boy's attempts to untie the knot. I also recollect that the lady of the house coming into the room at the moment the knot was loosed, and asking what was the matter, I rose instantly, saying "Nothing, M'am;" replying so quickly to her inquiry that she had no idea of the cause that had prostrated me.

I cannot say, but I think the reason for my having tried so foolish an experiment was this: that one of the boys having apparently strangled a half-starved kitten with his garter, began to buffet us juniors with it till he was tired, when we took up the game till he wanted his garter, when the body of the kitten was thrown into a dry ditch. There it lay for some time, till I remarked some motion in it; and having, by what means I forget, completely restored it to life, and fed it, I turned it out into the fields.

The knowledge of such facts as these may be useful, by the encouragement they give to persevering efforts for the restoration of asphyxiated persons, or in other cases of apparent death; and having entered upon this subject, I am induced to mention a simple and ready remedy that, in the only case I have had occasion to employ it, far surpassed in efficacy every other method of rousing the vital powers.

On Good Friday 1840, a very bleak day, I was called into a cottage to see a child that had just been taken out of a mill-stream, in which it had been partly immersed and partly floating for some minutes. I found it cold, insensible, swollen, and moaning at each breath, which was drawn at long in-

\* Erratum, page 642, in note, 5th line from the bottom, for "citrate," read "urate."

tervals. I immediately ordered it to be put into a tub of hot water, before the fire; but the tub was small, that the women were obliged to pour and dash the warm water over the body while others rubbed it. Finding this of no use, but that the pulse became almost imperceptible, the belly more tumid, and the body colder, I had the child removed from the bath, wrapped in hot blankets, and well rubbed. This produced amendment for a moment only, when seeing a birch rod hanging up, I took a few twigs, and began to whip the child. Instantly the limbs contracted from the pain, the cry was more distinct, the pulse rose, the belly subsided, and warmth was restored.

The frictions were now resumed, and a little hot brandy and water was given, but with slight effect; for the body again became cold, the pulse fell, the abdomen swelled, and life seemed fast ebbing away, when I again had recourse to the scourging, with the same effect as before. Now, in addition to the frictions over the chest, abdomen, and limbs, I applied a mustard plaster to the spine, and gave more brandy and water, but all in vain: I was continually obliged to return to the use of the rod. Presently the parish surgeon came, and we agreed, while waiting for a galvanic machine for which I had sent, to apply boiling water in a bladder to the chest, mustard baths to the feet, and ammonia, which he had brought with him, to the nose. The effect of the boiling water was dreadful to witness. The poor child instantly opened its eyes with a horrid stare, which it continued as long as the application lasted, uttering wailing cries at the same time, and becoming much more roused than before; but when we had removed the hot water, the unfavourable symptoms returned even worse than previously, and we could not recur to this remedy for fear of the consequences. Soon afterwards the galvanic apparatus arrived, and shocks and currents, gradually increased in power, were passed through the chest and diaphragm, but without more permanent effect than any other of the remedies used, except the scourging, which I had continued to apply at intervals all along. I now trusted to this and to the rubbing alone; and in about two hours from my first seeing the child, I had the satisfaction of putting it into bed to its mother

(whom I had directed to go to bed, for the purpose of keeping it warm), with every prospect of its speedy complete recovery.

When I saw it the next morning, I could not recognize in the delicate child before me the turgid features of the day before; and, what is rather remarkable, the only mark of the boiling water was a slight roughness of the cuticle of the chest; nor was the skin marked with weals from the use of the rod. I attribute the long duration of the asphyxia to a bronchial affection under which the child laboured at the time of the accident, but which was little aggravated by it.

The exhalation and reabsorption of the intestinal gases, under the diminution and return of nervous energy, in this case, seem to deserve notice, as affording a satisfactory explanation of the source of the tympanitis that attends many diseases affecting the nervous system in general—as hysteria, &c.; or the nerves of the abdomen—as peritonitis and typhus, though in this last disease we may consider the meteorism to have a general as well as a local cause. A late traveller in Norway, whose name I forget, asserts that the Norwegians, in their journeys over the half-frozen rivers, make use of this circumstance to release their horses when they fall through holes in the ice, by throwing a noose over their necks, which they pull tight, till the horse, beginning to be strangled, has its abdomen so much swelled with gas as to float on its back, and is thus easily drawn out of the water over the edge of the ice.

If you think these hasty remarks worth insertion in your journal, they are quite at your service.—I am, sir,

Your obedient servant,

T. OGIER WARD, M.D.

8, Camden Villas, Kensington,  
August 8, 1842.

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## CIRCULATION OF THE LIVER.

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*To the Editor of the Medical Gazette.*

SIR,

IN the number of your journal published on the 15th of July, there is a paper by Mr. A. Shaw on some Peculiarities in the Circulation of the Liver.



In a part of this paper the author states that it has not occurred to him to find, in any work that he had consulted, the theory of a tendency to the formation of a vacuum in the chest during inspiration, applied to the explanation of the circulation of the venous blood through the liver. I will take the liberty to point out to Mr. Shaw two works in which his views have been completely anticipated—the second edition of my father's work on the Circulation, Respiration, &c. published in 1833, and a paper published in June 1830, in the Archives Générales de Médecine, by M. Berard, the present distinguished Professor of Physiology in the Ecole de Médecine at Paris. In a paper on the Circulation of the Blood in the Head, published by my father in 1823, in the Edinburgh Medical and Surgical Journal, the facilities afforded by the peculiar structure of the head to the influence of the thoracic vacuum on the motion of the venous blood through that organ, are distinctly pointed out; and in the second edition of the "Inquiry on the Circulation" the facilities afforded to the circulation of the blood through the liver are explained on the same principle, viz. the permanently expanded state of the blood-vessels in the liver, caused by the unyielding nature of the tissue in which they are imbedded. When Dr. Wilson Philip and Dr. Arnott raised the objection to my father's views on the influence of a thoracic vacuum on the circulation, "that, in tubes not rigid, and so yielding and pliable as the veins, the coats during an inspiration would collapse, and thus prevent the progress of the blood in these tubes;" they had not taken the pains to ascertain how far the veins about, and at a considerable distance from, the chest, are prevented, by their position and their relation to the surrounding parts, from collapsing when pressure is removed from their internal surfaces. M. Berard, in his excellent paper, has entered into a very full detail of the anatomical provisions by means of which the larger veins are prevented from collapsing; and from these provisions draws a strong *a priori* argument in favour of the important influence of a central tendency to vacuum on the circulation in the veins. In these details Mr. Shaw will find his views on the circulation in the liver anticipated,

as also the views of his distinguished relative, Sir C. Bell, on the protection afforded by the muscles of the neck during inspiration to the large veins conveying the great proportion of the blood from the head to the heart. M. Berard's views are applications of the reasoning adopted by my father in his paper on the Circulation in the Head, to the venous circulation in other parts of the body. In 1833, my father, without any knowledge of M. Berard's paper, applied the same reasoning to the circulation of the blood through the liver, and also pointed out the necessary influence of the central tendency to vacuum on the circulation of the chyle in the thoracic duct—a theory subsequently revived by Sir C. Bell. In M. Berard's paper, the elasticity of the lungs is pointed out as the efficient agent in the formation of the central vacuum. This application of the elastic property of the lung, M. Berard, in 1830, advanced as a novelty; but in a course of lectures delivered by him in 1832-3, I had the satisfaction of hearing him declare that in this notion he had been anticipated by my father in 1815. In the second edition of the able work of Flourens on the Encephalon, there is a chapter on the movement of the brain, in which the influence of a central vacuum on the circulation in the veins, and its force, are better illustrated than by any experiments that I have seen. I am not aware of any experiments from which an idea can be formed of the force opposed during life to the entrance of the air into the chest during inspiration by the elasticity of the lungs, and of the consequent vacuum in the thorax. There is an apparatus of apparently little force, but so admirably applied, as to produce extraordinary effects, which, during inspiration, puts the elastic tissue into an extreme degree of tension, and of course proportionately increases the power by which the blood is sucked into the chest. I allude to the muscular tissue of the bronchi, on the uses of which I read a paper before the medical section of the British Association at Manchester, and which I intend shortly to publish with considerable additions.

There is one part of Mr. Shaw's paper which I conceive to be perfectly inadmissible. I allude to his third division, in which he attempts to point out a mechanism by which, during expira-



tion, the blood is not thrown back on the delicate structure of the liver. In the first place, in ordinary respiration, there is no tendency to any such regurgitation. It is only during forced expiration, and after the breath has been held in for some time, that swelling of the veins of the neck indicate an accumulation or tendency to a regurgitation from the chest; and it is, I presume, from this appearance that Mr. Shaw concludes a similar tendency to regurgitation of the blood on the liver under similar circumstances. It is obvious to every one that, from the elastic structure of the lungs, there is a tendency to vacuum in the chest, even after a full expiration; much less, however, than during inspiration. Secondly, Mr. Shaw's explanation of his mechanism is not consistent with sound physiology. The opening in the central tendon is not susceptible of enlargement by the muscular contraction of the surrounding fibres, or from the completely inelastic nature of tendon; much less can it be diminished by taking off the tension. The tendinous centre is the most immovable part of the diaphragm, and to it and the parts about the venous opening the liver is immovably fixed, which is incompatible with the gliding motion of the liver over the diaphragm, and the consequent valvular impediment to the regurgitation of the blood produced by this gliding motion.—I am, sir,

Your obedient servant,

JAMES CARSON, Jun., M.B.  
Physician to the Liverpool Northern  
Hospital.

August 6, 1842.

### NEW SPLINT.

*To the Editor of the Medical Gazette.*

SIR,

MR. F. CLARKE, splint-maker, Liverpool, has lately manufactured a much improved apparatus for fractures and other injuries of the lower extremity. Should the following notice of it be found worthy of a place in your pages, I shall feel obliged by its insertion.

I am, sir,

Your obedient servant,

J. NOTTINGHAM,  
Surgeon.

Liverpool, July 26, 1842.

In this splint the part resembling Mr. Liston's is somewhat modified.

It has no screw under the hinge which joins the leg and thigh-pieces, each of which, instead of being kept along with the other at any particular angle by the said screw, is supported on a forked iron rod, attached to it by a hinge-joint underneath; its other extremity being so arranged as to slide in an horizontal groove formed on each side of the support, or frame of the splint, which rests on the bed. This sliding motion is arrested at any point along the frame, by a screw which is attached to the foot of either support, and so the splint at the angle required rendered firm in any position upon its frame.

The sides of the frame are covered with plates of brass, which facilitate the motions required; and at the fore part, corresponding to the situation of the foot, the splint and frame are so articulated as to prevent any lateral motion of the former upon the latter; but this juncture can be separated if required, and the whole length of the conjoined portions of the splint raised to any convenient angle with the frame, thus allowing the limb to be placed in that position which is frequently chosen for the treatment of fractured patella; or the conjoined portions may be laid flat upon the frame, so as to afford a perfect apparatus for the treatment of fracture in the extended position.

An additional thigh-piece slides under the upper or posterior portion of the instrument, and may be drawn out so as to lengthen it, and then fixed by the accompanying screw. For this extremity, also, additional lateral pieces are contrived, external and internal, and each fixed, as circumstances may require, by two screws. These will occasionally be wanted during the treatment in the straight position; the outside one to pass beyond the crista of the ilium, the other to go towards the upper and inner part of the thigh. The foot board may be gently drawn downwards, or pushed upwards, by the screw attached to it, which is seen projecting from the extremity of the instrument. By this means the position of the foot may be regulated, and any requisite extension easily and securely obtained.

The fundamental part of the contrivance for protecting the heel is the same as in Mr. Liston's splint; but the

leather sock belonging to it affords an additional facility for raising the foot from the iron part of the apparatus, and thus, as it were, slinging it more safely. The rectangular frame of wood, without being heavy, is of such shape and extent as to rest securely on the bed; and its steadiness is further increased by transverse bars of iron at either end, which fold up when not wanted, so as to take nothing from the portability of the instrument, allowing it to be packed in a case of moderate size.

There is a long pillow for the splint, a body girth, and padded strap for the groin, rendering the appendages complete.

The advantages which this apparatus possesses over others previously employed are too obvious to require any particular notice at present.

It serves at once the purposes of a double-inclined plane, and of a straight splint.

It admits of being employed for raising and supporting the leg and thigh, in the treatment of fractured patella.

It combines the advantages of several splints of different sizes.

It affords a more complete protection to the heel than any splint hitherto employed.

It supplies a means of producing extension in cases of fracture, where this may be required, in a most safe and gradual manner, and withal has less the aspect of a complicated apparatus than many contrivances hitherto in use.

It should have been remarked above, that the splint is connected with its frame at the upper extremity, by a common brass hinge. The forked iron rod before mentioned has one branch of its divisions corresponding to each side of the frame of the splint, each branch carrying its screw along with it.

#### CASE OF A LARGE STONE FORCED INTO THE RECTUM.

*To the Editor of the Medical Gazette.*

SIR,

HAVING observed in two of your recent numbers some cases of foreign bodies in the rectum, I send you a short account of a case which occurred to me

some time ago, which may not be uninteresting to some of your readers.

I am, sir,  
Your obedient servant,  
R. C. RUSSEL.

Aberdeen, Aug. 8, 1842.

On the evening of the 30th September, 1840, I was sent for to see William Simpson, a man of weak intellect, who, I was informed had, the day before, thrust into the rectum a stone of large size. On introducing my finger about two inches into the anus, I felt distinctly the lower end of the stone, which was smooth and of considerable breadth, while the other end could be perceived above the left groin, and appeared to be more pointed. He complained of little uneasiness when in a lying posture, and passed his stools and urine freely and without pain. I attempted to extract it that evening, but failed. I returned next day, taking along with me forceps of different sizes and of a variety of construction, and again endeavoured to withdraw it, but with no better success. On the third and fourth days I visited him, accompanied by Dr. Andrew Moir, who was also unsuccessful in his attempts to extract it. On returning next day (October 4th) I found him feverish, and he complained of severe pain in the rectum, from which there was a discharge of purulent matter mixed with blood. These symptoms increased until Friday, October 9th, when, being raised to the sitting posture in his bed by the assistance of two persons, the stone descended, and projected so far through the anus, that he was able to take hold of it and extract it.

The surface of the stone is smooth throughout; one side is quite flat, the other slightly convex; at the end by which it was introduced it is about one inch in breadth, from which it gradually increases till near its base, where it is four inches in breadth. The length is 5½ inches, and the greatest thickness 2 inches; while the greatest circumference is 9½ inches. It weighs exactly 32 ounces.

I may add, that he was in the practice of forcing stones, sticks, and other substances, into the rectum, for some time before; but none of them were of large size, and were expelled with the aid of a few doses of castor oil, or some other gentle laxative; and also that

about six months ago he introduced another stone, which was removed by Dr. Moir with a midwifery forceps. It was nearly as large as the one I have described, and weighs only three ounces less. Its dimensions are, length,  $4\frac{1}{2}$  inches; greatest breadth  $3\frac{1}{4}$  inches; and in thickness 2 inches. Its greatest circumference across exceeds the other by half an inch.

The stones are deposited in the museum of the Medical Society in this city.

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#### ANALYSES AND NOTICES OF BOOKS.

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"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

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*Die Taubheit der Taubstummen ist noch nicht geheilt worden, und überhaupt unheilbar.* By DR. KRAMER, of Berlin, in Caspar's Wochenschrift, Nos. 47 and 48. 1841.

IN the essay bearing the above title, Dr. Kramer endeavours to show that no confidence is to be placed in the reports of cure of the deaf and dumb, and he states as his opinion that the deafness of that unfortunate class of beings is altogether incurable. Few authors, he says, had called in question the curability of this disease, before he published his work on "Diseases of the Ear," in 1836. Bousquet, in 1839, in his eulogy upon his friend Itard, stated that that celebrated aurist, after many years of the most laborious investigation, arrived at last at the conclusion that there was actually no remedy for the deafness of the deaf and dumb; and that a careful education was the only mode of bettering their condition. Dr. Kramer is induced to write the present paper, in consequence of the proposition of Churchill, Thornton, Shmalz, and others, to subject the deaf and dumb, before commencing a methodical education, to all those modes of treatment and operations from which there is the remotest possibility of expecting a cure. This, however, he says, only raises false hopes, and occasions a loss of valuable time.

He next proceeds to ask when the deafness should be considered as cured; and says, that as children who hear perfectly well learn the language they hear spoken around them in three, or

at the most four, years, so no patient can be considered as cured unless he is able to learn perfectly the language spoken by those with whom he associates in the same space of time, and by the ear alone. He then goes on to say, that none of the recorded cases of cure deserve the name, because in no instance was the patient capable of learning to speak in this manner. He then instances a great many cases called cures, which he endeavours to prove were merely ameliorations, or imperfect cures at best.

Without transcribing all the cases the author brings forward and pronounces unsatisfactory, it will suffice to enumerate a few of them.

Itard, after mentioning that he had cured the deafness of a deaf-born child by means of a blister over the ear, says, that he had no doubt the child would learn to speak if a relapse did not take place. Regarding another patient in whom he perforated the tympanum, he remarks that the hearing was restored; but that he did not make so much progress in speaking as in hearing. This patient died shortly afterwards. Deleau perforated the tympanum in eighteen deaf-born, and cured their deafness. Most of them, he *hoped*, would, in course of time, be able to speak. He was sure some of the others would have been able to do so, had not their relations removed them, &c. Prof. Hendriksz, of Gröningen, perforated the tympanum in eighty-one cases of congenital deafness. Among three of them only did he observe "a certain improvement in the hearing; not, however, sufficient to be of use to them in learning to pronounce words." The apothecary, Sprenger, of Jevrr, cured, by means of galvano-electricity, many deaf and dumb. They, however, heard only the ticking of a watch, the singing of birds, the human voice, and single words. Among Deleau's cases one deemed cured could only learn the pronunciation of letters; another of single words, and so on. Our author cites many similar cases from the practice of Prof. Lax, Mazzoni, Pezz, Felibien, Merle, Curtis, Sæves of Stockholm; Barries, of the Deaf and Dumb Institution of Berlin, in all of which, either the history is imperfect, the case incomplete, or the case misrepresented. In some the physicians were deceived by the readiness with

which the patients understood and answered questions addressed to them, which faculty was acquired from the education they had received in Deaf and Dumb Institutions. Dr. Kramer then mentions the principal appearances which have been found in the cases of deaf-born, after death.

Bergmann found in the cavity of the tympanum a sarcomatous degeneration of the mucous membrane. The semicircular canals, ampullæ, and auditory nerve, could with difficulty be recognized. Coch found the cavity of the tympanum, the cells of the mastoid process, and the Eustachian tube, filled with a deep red-coloured growth, in close apposition with the tympanum and small bones. In two cases part of the semicircular canals was wanting; in a third there was no trace of the fenestrum rotundum; in a fourth the aqueductus vestibuli was large enough to let through a small probe; in another the horizontal and oblique semicircular canals were entirely wanting. In one case the cochlea was absent; in another the two scalæ cochleæ ended, each for itself, in a cul de sac. In two cases two of the semicircular canals were closed in the middle, &c. Arnemann noticed the auditory nerve, not only larger, but harder than usual, and divided into several fasciculæ. Hyrtl, in two cases, found a remarkable defect in the semicircular canals and cochlea, and the nerve of audition greatly degenerated. Another case wanted the lamina spiralis of the cochlea, the semicircular canals were considerably smaller than natural, and in one ear the stapes was absent. Thurnam observed, in a boy of thirteen years, the cochlea filled with a gaseous matter, one of the semicircular canals imperfect, and no trace of the sacculus vestibuli nor membrane lining the semicircular canals. Clarus found in two cases neither the fenestra rotunda, the os lenticulare, nor the stapes; in a third the auditory nerve was smaller than natural; in a fourth the cavity of the tympanum narrower than usual, and the vestibulum sunk deep in a mass of bone. Mondini saw in a cochlea only one turn and a half: the upper one was deficient. Mücke and Bochdalek saw the vestibulum having no communication with the semicircular canals.

In these cases, observes the author, no treatment could have been of any avail in removing the deafness. He is

inclined to believe that such malformations and defects are much more frequent among the deaf and dumb than is generally supposed. But even if no such diseases were present in the deaf-born, it is evident that there must be a weakness of the nerve approaching to paralysis, or an actual paralysis of the nerve. Both of these conditions, he contends, are as incapable of being cured as the above-mentioned abnormal conditions of the organ.

"From all my observations," adds the doctor, "I have come to the conclusion, that all deaf and dumb, without any exception, should be subjected to a methodical system of instruction, whereby they may be taught to understand what others are saying, by the motions of the lips, to express their own thoughts, by means of an intelligible pronunciation, and so be able to carry on a conversation with those who hear well in a moderately rapid and easy manner."

## MEDICAL GAZETTE.

Friday, August 20, 1842.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE tenth meeting of the Provincial Medical and Surgical Association, of which a very full account was given in our last number, has taken place at a critical period of medical politics, when doubt and difficulty pervade so many questions, and when the various opinions and projects with regard to medical improvements are so numerous. It has occurred at a fortunate time for the manifestation of its influence, inasmuch as the expressed sentiments of so large a body of men as are included in this Association cannot but come with peculiar force, and deserve particular attention at the present moment.

It is no small difficulty connected with the subject of medical reform, and one which has been felt by all who have taken an active part in it, that the members of the profession are so scattered, and so little leagued together, that it is almost impossible to learn the sentiments of any great number. A few practitioners, by the medium of the press, present their opinions to us; but of these, in general, each is different from every other, and is connected with some peculiar scheme, which the author imagines to be essential to a satisfactory alteration; whereas, of the ideas of the great body of the profession we know comparatively little, and there appears no means of obtaining that information except by meetings of this description. We have, therefore, watched for the present occasion, in the hope that new light might be thrown on some of the subjects which are at present engaging so much attention, and that weight might be given to some of the opinions that are now floating about rather loosely. It is true we were not without the remembrance that, in large assemblies of this sort, it frequently happens that few conclusions are arrived at, and few motions of importance adopted. The hurry and bustle necessarily attendant on them is by no means suited to calm and patient investigation; according to the old adage, there is often much cry and but little wool at such times. And we cannot say that the present meeting has proved altogether an exception to this general rule, so far as the actual business which was transacted is concerned. However, as much, perhaps, was done as could be expected of a large assembly. Indeed, it is rather in the private meetings of the Council, or of a more limited number of their members, that points are considered with proper care and attention, and proposals made which are

produced for approbation at the general meeting.

The proceedings of this Association have generally been marked by much moderation and good judgment; and the Report of their Council, on the present occasion, as well as the proposals made and carried, give us no reason to alter this opinion. We find none of the outrageous and radical demands—none of the schemes of universal abolition, &c. which are but too frequently generated in meetings of this sort. The object proposed by them is neither to injure existing institutions nor to abrogate those distinctions in the profession which are believed to be useful to the public, but to produce such changes in the present medical corporations as shall render them fitted for the government of the profession at large. The principles upon which it is conceived any measure intended for the regulation of the medical profession should be founded are “*uniformity of the primary qualification, to be tested by sufficient examination; equal right, in every member of the profession, to practise throughout Her Majesty’s dominions; and the adoption of the representative system in the formation of the councils or governing bodies.*” We are not quite prepared to recognise these as the essential principles of medical reform, or to regard them as forming the keystone on which the strength of the arch must depend. But we shall take a future opportunity of expressing our opinions with regard to them more at length. We only refer to them now to show that the proposals of the Association do not go to the destruction of our institutions, but rather to alter and confirm them.

We must say that we felt surprised that, in the Report of the Council, the subject of empiricism and illegal practice should have been omitted. It is



here, as much as any where, that we stand in need of all the assistance we can get, and of the concentration of all the medical opinions, which we believe to be pretty much agreed on this point, that we can muster. And although the opinions of the Council may be already before us, surely the present afforded a good opportunity of expressing them more strongly, and of making some urgent representation on the subject. It is not, however, too late, and we hope that the assistance of so influential a body may still be given. We hope that the division of the Council appointed to watch over the interests of the profession will not suffer those interests to be sacrificed without a struggle, and that they will not fail, by petitions and all the other means which they have in their power, to endeavour to secure to the profession a better protection against the unlettered and unlicensed practitioner. Mr. James, it is true, did allude to the subject in the gentlemanly and judicious speech with which he opened the proceedings of the first day. He justly observes, "If it were true that the government did not intend directly to interfere with irregular practice, and the remedies now offered by law were to be abandoned, the interests of large numbers would be injured. Their self-interest must be sacrificed, if justly demanded by the public welfare;" "but," he adds, "it is equally reasonable that they should be protected from unqualified and unlicensed practitioners." Is it, then, to be expected that so large a body of men, one of the objects of whose association is to guard the welfare of the profession, will sit tamely by, and suffer the interests of a large body of the members of that profession to be injured, without exerting themselves to prevent it? Surely it is the duty of such a body to stand foremost in the breach, and to endeavour to protect

themselves and their brethren, by representing to Sir James Graham and others, the evils that at present result from the want of greater security against unlicensed pretenders, and the still greater evils that must necessarily follow if even that little security be altogether withdrawn.

But we must not regard the discussion of such questions, or the consideration of the dry detail of medical reform, as the only object held in view by the present meeting, nor must we rate its advantages by the motions which have been adopted with regard to it. Though the subject of medical politics at this meeting comes so nearly home to all as necessarily to engross much of their attention when assembled, one of the main designs of the Association, as stated in the original address by Dr. Hastings, at Worcester, is "the maintenance of the honour and respectability of the profession, generally, in the provinces, by promoting friendly intercourse and free communication of its members; and by establishing among them the harmony and good feeling which ought ever to characterize a liberal profession." Now, undoubtedly, one of the greatest, if not the greatest, of the advantages of these annual meetings is their instrumentality in carrying out these objects, by the unanimity and good feeling which they tend to produce among the several members of the Association, and by the removal of those petty dissensions which are observed too commonly to exist among them. They form, besides, an excuse to the practitioner for a temporary abstraction from the daily routine of business, and from the bedside of his patients, which, though seldom enjoyed, is, on many accounts, not the less desirable.

The meetings of this Association have generally savoured rather too strongly of flattery and adulation; their

time has been occupied a little too much with complimentary speeches passing to and fro among the grandees, which, in some measure, gave rise to the suspicious idea that they were brought about as much to gratify the vanity of certain persons as to promote the interests of the profession. But, without putting so uncharitable a construction as this upon the matter, we may suppose that politeness has on these occasions exceeded the bounds of discretion, and merged into flattery. We are happy, however, to find that the meeting which has just taken place is more than usually free from this taint; the complimentary addresses having been confined to such members, as by their zeal and labours, deserved the thanks of the united body; and from whom to have withheld that testimony would have been neither courteous nor just.

This association was commenced from a sense of the disadvantages under which the practitioners of medicine in the different towns have laboured, and of the want of a system of co-operation by which their separate exertions for the promotion of knowledge and of the healing art might be united, so as to render them more influential and more extensively useful; and, so far as numbers are concerned, it has been highly successful. It has existed more than ten years, and during that period it has embraced a great many of the practitioners of the country. It now musters 1400 members, and, to use the words of its secretary, Dr. Hastings, "it is unquestionably the first in the kingdom, and has gone beyond what he or any of its original founders could have calculated on." From the manner in which it has been conducted, the moderation that has always been shown in its proposals, and the desire which it professes to advance medical science, and to improve the condition of the

practitioner, the resolutions which are adopted by its council come to us backed with no small weight of authority, and will no doubt receive the attention they merit. We would therefore urge upon the members of this association to make use of the influence they possess at the present crisis a little more actively—to employ it for the benefit of the profession, now that such assistance is so much wanted. We more particularly would allude to the benefit which might ensue from a candid representation made by the council to Sir James Graham, with regard to the necessity of introducing more active legislation for the protection of the authorized members of the profession. We trust some such course will be taken by them, and that speedily, before any bill shall have advanced so far as to render alteration difficult. It is of no use to confine ourselves to simple expressions of discontent; we must be stirring in our own defence; we must labour that we be not trampled on, and use our best endeavours to support the dignity of the profession. It is quite certain that remonstrance can proceed from no quarter better than from so large a body of men, whose actions cannot be attributed to party feeling or private interest, but must be supposed to proceed solely from the desire to improve the condition of their profession, and to promote the welfare of the public at large.

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## UNIVERSITY OF LONDON.

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### BACHELOR OF MEDICINE.—FIRST EXAMINATION FOR HONOURS.

Aug. 11.—Morning, 10 to 1.

#### *Anatomy and Physiology.*

Examiners, Mr. KIERNAN & Prof. SHARPEY.

1. Give the dissection required to show the origin, course, and distribution, of the Occipital Artery; describing the several parts exposed in the dissection.

2. Describe the structure, chemical composition, and arrangement, of the several tex-

tures of the Human Teeth. Describe also the origin, formation, and mode of eruption, of the Temporary and Permanent Teeth.

Afternoon, 3 to 6.

1. Describe the dissection required to display the Axillary Plexus of nerves and its branches, from the external border of the Scalenus Anticus muscle to the lower border of the Axilla, describing the parts successively brought into view in the course of the dissection.

2. Give an account of the structure and mode of growth of the Epidermis and Epithelium. Describe the intimate structure of Elastic Tissue, and mention the parts of the human body in which it is found.

Aug. 12.—Morning, 10 to 1.

### Chemistry.

Examiner, Prof. DANIELL.

1. What is meant by *Specific* and *Latent* Heat? Explain with reference to examples, and state the general modes of estimating each.

2. What is meant by the Polarization of Heat? How may Heat be polarized?

3. State Dr. Faraday's theory of Electrical Induction, and the principal facts upon which it is founded.

4 How is the force conducted in the different parts of a Voltaic Circuit? and what is the law of its conduction?

5 Having obtained the amount per cent. of Carbon, Hydrogen, and Oxygen, in a Vegetable substance as follows,

C . . .	42.4
H . . .	6.5
O . . .	51.1

100.

how would you proceed to calculate its composition in Equivalents? and how might the result be confirmed?

6. What is the view which must be taken of the Monobasic, Bibasic, and Tribasic Phosphates upon the Binary Theory of Salts?

7. What are the principal chemical characters of Lithic and Phosphatic calculi?

8. What is the constitution of Urea? How may it be formed artificially? and how may it be detected in the urine?

Aug. 12.—Afternoon, 3 to 6.

### Materia Medica and Pharmaceutical Chemistry.

Examiner, Dr. PEREIRA.

1. Describe the method of obtaining *Oil of Vitriol*. Explain the theory of the

process. How would you detect the presence of Lead, Nitrous Acid, and Arsenious Acid in *Oil of Vitriol*?

2. What are the salts with which commercial Bromide of Potassium is frequently contaminated, and by what tests can you detect them. What are the characters of pure Creasote? By what means would you ascertain whether *Ferri Potassio-Tartras*, Ph. Lond., had been properly prepared?

3. What effect on the gums is produced by the absorption of Lead?

4. In what cases are Mercury and Iodine respectively indicated as resolvents? And what are the circumstances which lead you to prefer the one or the other of these medicines?

5. By what botanical characters would you distinguish *Conium Maculatum* from *Æthusa Cynapium*? By what characters is the fruit of *Conium maculatum* distinguished from that of *Pimpinella Anisum*?

6. By what test is the presence of *Salicin* in a decoction of Willow-bark to be ascertained?

7. What are the effects and uses of *Lobelia inflata*? In what form and dose would you administer it?

8. Name the substances respectively numbered 1, 2, 3, 4, 5, 6.

## NERVOUS AND ELECTRICAL FORCES.\*

*Abstract of a Paper by HENRY LETHBY, A.L.S., giving an Account of the Dissection of a Gymnotus Electricus, together with reasons for believing that both it and the Torpedo derive their Electricity from the Brain and Cord, and that the Nervous and Electrical Forces are identical.* Read before the London Electrical Society, Aug. 16th, 1842.

THE paper was divided into three parts, 1st. The anatomy of the fish. 2d. Its electrical properties. 3d. Whether the former would afford any clue to the comprehension of the latter.

The anatomical division went to show that the electrical organs were not super-additions of a peculiar structure, but the result of an increased development of the aponeurotic intermuscular septa, which thereby pushed the lateral planes of muscles upwards to the back; this aponeurotic septa became so arranged as to form long tubes or cells, which ran diagonally from within outwards; and the juxta-position of these tubes made the longitudinal laminae which tra-

\* Communicated by the author.

versed the whole length of the organ. The number of tubes in an entire animal was about 550,000. The organ was found to be largely supplied by the spinal nerves, which formed loops between the laminae. The peculiar nerve of Hunter, called by Mr. Letheby the *posterior* or *dorsal* branch of the fifth, being distributed entirely to the muscles of the back.

The second division of the subject had relation principally to the experiments of Williamson\*, Humboldt†, and Faraday‡, on the *Gymnotus electricus*; and to those of Walsh§, Davy||, Todd¶, and others, on the *Torpedo*, which fully proved the identity of their phenomena with those of ordinary electricity, inasmuch as in both they obtained the shock, the spark, deflected the galvanometer, made magnets, and decomposed water; while the laws governing the discharges were, that they were voluntary, had a determinate course, and depended on the integrity of the nerves.

The third division—whether the anatomical investigation offered any explanation of these phenomena—was discussed at some length. The two principal facts resulting from dissection were, that, in all electrical animals, there were organs made up of aponeurotic septa, arranged so as to form cells, in which was contained an albumino-gelatinous fluid. These organs were always supplied very largely by nerves of sensation and motion, and not of organic life; and this supply was much greater than necessary for the purposes of life; and the question now arose, whether the organs originated the electrical force, or whether it was supplied by the nerves, and there made tense, as in a Leyden battery. The arguments in favour of the former were, that two fluids, dissimilar in composition, or even density, and separated by a membrane, would give rise to electricity; and such an arrangement might exist in these organs: but then the phenomena would be physical, not vital; and it would not explain how it was accumulated, why it was at the voluntary service of the animal, or why discharges did not take place at all times.

On the other hand, division of nerves preventing discharge, irritation of the brain increasing the discharge, its voluntary nature, together with the anatomical considerations of the nervous supply, and the arrangements of the organ itself, being composed alternately of a conductor and non-conductor, favoured the view that the electricity was supplied by the nerves.

References were then made to the recent views of Liebig\*, viz. that all vitality depended on chemical action; to the fact that the vital force in motion effected combination (nutrition and reproduction), and decomposition (muscular action, &c.); and also to the experiments of physiologists, especially Wilson Philip†, which proved that electricity, sent along nerves, gave rise to phenomena allied to those of vitality, viz. it produced motion, sensation, and secretion. And, moreover, the experiments of Professor Zantedeschi and Dr. Favio‡ sufficiently proved the presence of two neuro-electric currents, in warm-blooded animals, during the performance of the functions. From these references the following deductions were made, which, at any rate, showed the great analogy of the nervous and electrical forces.

1. All vitality is the result of chemical action. Electricity is the result of chemical action.

2. The vital force in motion effects combinations (vegetative life), and decompositions (animal life).

The electrical force in motion effects combinations and decompositions.

3. During the performance of the vital functions, electricity has been detected in warm-blooded animals.

Electricity sent along nerves gives rise to phenomena not to be distinguished from the vital—viz. sensation, motion, and secretion.

4. The phenomena of the *gymnotus* and *torpedo* have been proved to be electrical; and reasons were adopted to show that this electricity was derived from the brain and cord.

9, Windsor Terrace, City Road,  
Aug. 18, 1842.

## RETRACTION OF THE LEG CURED BY DIVISION OF THE FLEXOR TENDONS.

A GIRL, set. 19, had suffered inflammation of the right knee when 8 years old, which left the limb in a semiflexed position, useless and troublesome. The anterior extremity of the foot could not be placed on the ground in the erect position, the heel being raised six inches. The muscles of the limb were relaxed and atrophied, but not paralysed. There was swelling of the knee-joint, and projection of the internal condyle of the femur. The patient could only walk with

\* Phil. Trans. 1775.

† Recueil d'Observations de Zoologie, &c. t. i. page 49.

‡ Phil. Trans. 1839.

§ Ibid. 1773.

|| Ibid. 1832 and 1834.

¶ Ibid. 1816.

\* Animal Chemistry in its Application to Physiology and Pathology.

† Inquiry into the Laws of the Vital Functions.

‡ Lond. Ed. and Dub. Phil. Mag. for April 1841.

the assistance of two crutches. Orthopedic extension was tried for ten or eleven months, but without success. The obstacle and pain not being in the articulation itself, but in the situation of the flexor tendons, which were tense and rigid when extension was attempted. The tendons of the biceps semitendinosus and semimembranosus were divided through, not without some difficulty and danger of wounding the popliteal artery, on account of a cushion of fat which surrounded them. On extending the limb immediately afterwards, the heel was found to have descended from two to three inches. The elongation of the limb was, after this, so easily and quickly accomplished by means of suitable apparatus, that on the tenth day the limb was only very little shorter than the other; but the thigh and leg were not quite on a straight line, and the flexion returned when the limb was left to itself. After this the extremity became rather longer than the other, which was supposed to result from some change in the articular surfaces; it subsequently, however, resumed its proper length; and as the surfaces became accommodated to each other, the tendency to assume the flexed position diminished. Four months and a half after the operation, the patient was able to walk without assistance, and each day gained strength and power of movement in the limb.—*Journal de Médecine*.

### INJECTIONS OF BELLADONNA IN STRANGULATED HERNIA.

By DR. F. FISCHER, of Tambach.

In September 1838, a woman, aged 68, experienced a swelling in the right groin, during the occurrence of a severe cough; this was followed by pain and tenderness in the part, vomiting, sleeplessness, and pain in the abdomen. Examination shewed a strangulated hernia, which could not be reduced. The author directed injections of belladonna (one scruple of the leaves in each) to be administered. After three clysters the taxis was again employed, and the hernia returned without difficulty.

A man, aged forty years, had from his youth suffered under an inguinal hernia of the right side, which became incarcerated whilst he was loading a waggon with wood. After taxis, bleeding, cold applications, and other means, had been tried without success, three injections of belladonna were given. The effect of these clysters shewed themselves after a while by symptoms of narcotism, as restlessness, delirium, dilated pupil, &c., which subsided under the employment of cold applications

to the head. Reduction was then again attempted, and the hernia returned with very little trouble.—*Schmidt Jahrbücher*.

### ORGANS FOR THE SECRETION OF SWEAT.

By DR. GIRALDES.

THE organs which secrete the sweat, which were first pointed out by Breschet, and afterwards described by Purkinje, Gurlt, Wagner, Serres, Arnold, Madden, and others, Dr. Giraldes has studied more particularly, and added a few additional facts. These glands exist in great numbers in the palm of the hand, and in the soles of the feet, in which situations they are very numerous, and being well developed, are more easily examined than elsewhere. They exist also, and are of tolerable size, in all the spots covered with hair, as the arm-pits, perineum, scalp, &c. They are also seen over the whole surface of the derma; but are there extremely small, almost rudimentary. These organs are composed, according to Dr Giraldes, not of simple canals divided at their extremity, but of a straight canal, which pierces through the whole thickness of the derma, and is imbedded in the fatty layer beneath it. Sometimes they penetrate this fatty layer to a very considerable depth; at the extremities of the fingers they even seem to transverse it completely. Arrived at this point, these canals sometimes dichotomize; in general, however, they remain simple, and roll on themselves, so as to form a small button-shaped body. These convolutions are sometimes all on the same plane; at other times, so as to form a spheroidal appearance. Dr. Giraldes states that he has shown this structure to Professor Serres.—*Comptes Rendus des Séances de l'Académie des Sciences*; and *Edinburgh Medical and Surgical Journ.*

### CURE OF ACUTE HYDROCEPHALUS.

A boy, two years and a half old, well nourished, robust, and with a prominent forehead, became unwell on December 8, 1841. The symptoms were those of an inflammatory cerebral affection, attended with fever. The disease had made considerable progress by the 14th, which was the day on which the author first saw the patient. The prognosis was the more unfavourable, inasmuch as the great fontanelle was unclosed to the extent of an inch in diameter. Every means was put in requisition—blood-letting, calomel internally, mercurial friction on the nape of the neck, blisters, cold applications to the head—without benefit. The disease



went on increasing, and seemed on the 26th to have reached its height. The little patient lay powerless and stupid, the head and face flushed and hot, there was grinding of the teeth, the pupils were relaxed and insensible to light. The child had ceased to scream. The diuretic medicine resorted to latterly had failed to promote the urinary secretion. While in this state, on the 20th day of the disease, there flowed from the right ear such a quantity of pure and limpid fluid as drenched thoroughly the child's neck-chiefs. On the same evening, the patient was much relieved. By the use of diuretics, the flow of urine was now maintained, in a copious current, during many days. The coma, in which the child has been for some days, disappeared; the pupil regained motion; in six weeks the little patient was completely cured.

Another case of acute hydrocephalus is given, in which a similar discharge, but to a less extent, took place. This was on the 20th of February, 1834, and the child recovered from that attack; but subsequently, on the 6th of December, 1836, had a second attack of the same disease, from which it also recovered, though on the last occasion no watery discharge from the ear took place.—*Casper's Wochenschrift*; and *Brit. and For. Med. Rev.*

#### ADULTERATION OF THE CANTHARIS VESICATORIA.

By MR. JOHN MACKAY, Edinburgh.

A SPECIES of adulteration of the above insect came lately under my notice; which, from its singularity, I am induced to communicate. I do this more readily, as I am not aware of the circumstance having been mentioned before. From an ounce weight of the flies, I picked, in a few minutes, forty-six various coloured glass beads. I estimate the weight of glass in this form to amount to upwards of three ounces in a pound weight of the cantharides. The late Dr. Duncan, in speaking of the adulteration of cantharides, says, "the *melolontha vitis* is sometimes found mixed in considerable numbers with the cantharides. They are easily distinguished by their almost square body; and as they do not stimulate the skin, should be picked out before the cantharides are powdered." (Duncan's Dispensatory, p. 276.) Dr. Pereira and other writers mention the powder only as liable to adulteration, and chiefly with euphorbium. In Dr. Christison's last work, he says, "in the entire state cantharides are scarcely subject to adulteration in this country. In Germany, the *cetonia aurata* of Fabricius, or *scarabæus auratus* of Linnæus, the golden

beetle, is sometimes mixed with it; but this insect may be known by its greater proportional breadth and flat belly." (Christison's Dispensatory, p. 264.) There is, therefore, no evidence of any extraneous matter being introduced to the flies, excepting the golden beetle; which, of course, is at once distinguishable from its appearance.

The addition of glass beads to cantharides, whether it be accidental or fraudulent, ought to be exposed, as the particles of glass, when reduced to powder with the flies, and applied for the purpose of vesication, must prove a source of extreme irritation to the skin.—*Pharmaceutical Journal*.

#### OCCURRENCE OF CONFLUENT SMALL-POX IN A CHILD BEFORE BIRTH,

ROSA GALVANI, 37 years old, a healthy woman who had been vaccinated successfully when an infant, was delivered of a male child on June 3, 1841. The labour was easy, and the mother recovered without any bad symptoms, but the infant was an eight months' child; labour seemed to have been induced by the small-pox, with the pustules of which the child was covered. At birth the child was in a comatose state, from which it was relieved by allowing some blood to flow from the umbilical cord. On the second day the pustules appeared at their height, on the fifth day maturation began, but on the sixth a black spot showed itself in the centre of each pustule, and the child was attacked with febrile symptoms, subsultus, and trismus. On the seventh and eighth days this condition became aggravated, and the child died at 3 A.M. of the ninth day after birth.

When interrogated about her own health, the mother stated that about a week before delivery she felt generally ill, was feverish, lost her appetite, and suffered much from heat in the stomach, but not so severe as to make her seek for medical advice.—*Bulletino delle Scienze Mediche di Bologna*; and *Brit. and For. Med. Rev.*

#### PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

(Report concluded from our last number, p. 784.)

THE dinner took place at the New London Inn at six o'clock. T. H. James, Esq. the President of the Association, took the chair; and the company consisted of about 120 members of the profession, including nearly all the gentlemen who had visited the city from a distance. The Venerable Archdea-

con Pott, who is chancellor of the Cathedral Church of Exeter, and C. H. Turner, Esq. the Right Worshipful the Mayor of the city, were also present as guests.

On the removal of the cloth the Chairman gave "The Queen," "His Royal Highness the Prince of Wales," "Prince Albert, and the rest of the Royal Family," all of which toasts were received with enthusiastic demonstrations of loyalty and respect.

The Chairman said the next toast upon his list was the "Bishop and Clergy of the Diocese" (cheers), and it was one which he felt it his duty to introduce with a very few observations. The character of the eminent Prelate who so ably presided over the affairs of this diocese was too well known and too highly appreciated to require either comment or eulogy from him. (Cheers.) In speaking of the clergy, he need not confine himself to this diocese alone, for he was addressing gentlemen from various parts of the country who were fully able to appreciate the faithfulness and zeal with which their important and arduous duties were everywhere performed. He was quite satisfied that every one who heard him would concur with him in saying that no body of men in this empire were better entitled to any mark of respect which could be shown them, and especially by members of the medical profession. They were ever among the foremost in promoting all works of benevolence and charity, and in alleviating the distresses of their fellow men. At the bedside of the suffering patient the medical man often found in them his best assistants, and they were always ready to administer the consolations of religion, which alone could take away the bitterness of that cup of which every one of us must drink. He need say no more to ensure for the toast which he had now to give a most warm and enthusiastic reception. He was happy, however, in being able to couple with it the name of a distinguished individual who had honoured them with his presence this evening, and of whom he was proud in saying that he was himself the son of one of the most eminent surgeons of which this or any other country had ever been able to boast. (Cheers.) He gave them the health of "The Bishop and Clergy of the diocese," coupling it with the name of the Rev. Chancellor Pott. (The toast was received with the most enthusiastic cheers, which were several times renewed.)

The Venerable Chancellor replied in an eloquent speech, which, from want of space, we are compelled to omit.

The Chairman said they must not forget another distinguished individual who had honoured them with his company that day; he meant his friend who sat at his right, the Chief Magistrate of the city of Exeter. (Cheers.) The Association had already held its meetings in many of the most important

cities in the empire; and wherever it had gone it had achieved easy yet secure conquests. In every place which they had visited they had at once laid the municipality at their feet. (Hear, hear.) He was quite sure that the Mayor and Council of Exeter would readily have done all that had been done by other places to welcome, and do honour to, the Association, if they had had the good fortune to possess the same ample means. (Hear, hear.) That they had not been able to do so had not arisen from any want of inclination. He was convinced that the members of the Association would readily concur with him in paying this mark of respect to the municipal body of the city, and he had therefore great pleasure in proposing the "Mayor and Town Council of Exeter."

The Right Worshipful the Mayor acknowledged the toast in a neat speech.

The chairman said that he had next to call upon them to drink a toast to which he anticipated a prompt and most enthusiastic response—it was that of the founder of the Association, Dr. Hastings. When they remembered that, ten years ago, the members of the medical profession in the provinces were without any common bond of union (hear, hear); that although they possessed within themselves the elements of great strength, of moral energy, and of high character, yet these were of little use, because they were never found joined together for any practical purpose (cheers): when they remembered, also, that it was to Dr. Hastings they owed the formation of this great Association, in which, for the first time, they had found that bond of union which they had long so much required—which had given to them an amount of influence, and produced among them a degree of harmony, which had never before existed—which had the effect of bringing together the members of the same profession from one end of the kingdom to the other, to meet at some common point, where old friendships were renewed, and new friendships formed never afterwards to be forgotten—which had furnished them with an inducement sufficiently strong to draw them for a season from their homes in order that they might interchange feelings of mutual friendship and good will, and unite, not merely to uphold the honour and dignity of the profession, but also for the more extended diffusion of scientific knowledge, and so to benefit mankind: when, he repeated, they bore in mind that it was to Dr. Hastings, the Secretary and founder of the Association, that they owed these manifold advantages, he was sure they would need no stronger motive to induce them to drink this toast with all the honours which it was possible for them to bestow upon it. (The toast was drunk with the

most enthusiastic cheering, which was repeatedly renewed.)

Dr. Hastings rose to return thanks, and spoke to the following effect :—Mr. President and brother members : the very kind manner in which you have invariably expressed your feelings towards me has ever claimed my warmest gratitude. After ten years of service, during which many imperfections in the performance of my duties must have been apparent, any tribute from you would have been acceptable ; but after the enthusiastic manner in which you have conveyed your thanks, I feel satisfied that any words which I can use on the present occasion will convey inadequately the sense of my obligation to you. It is a proud distinction to me to be considered the founder of this noble institution ; and when ten years ago I commenced, in conjunction with many friends I now see around me, the formation of this Association, I little dreamt of its ever attaining the eminence it has already acquired. During those ten years, Sir, our Association, like the noble oak of the forest, has struck its roots deeply into the midland counties, and has thrown out vigorous branches to the north and to the south, to the east and to the west. During this comparatively short period, what have we done ? I am aware that this question has been sometimes asked disparagingly — but what have we done ? We have every reason for answering this question ; not, indeed, in the spirit of self-glorification, but with truth and modesty, in order that we may place our claims to public confidence on their true footing. I reply, we have every year published a volume of *Transactions*, and that these ten volumes form a rich treasury of practical information ; and, more especially, we have done more towards accomplishing that very desirable object, the procuring a good medical topography of England, than had previously been effected. We have thus, in a scientific point of view, raised the character of the provincial profession, who, heretofore, notwithstanding many eminent men had arisen among them, had no claim as a body to any distinction. [The Doctor proceeded to touch on a variety of subjects ; but our space obliges us to limit our report to the concluding part of his speech, which was as follows :—] I must yet, sir, detain you a little while : I have spoken of the objects of the Association, and of the manner in which we have been engaged. Having therefore hinted at what we have done, I now ask what we are about to do ? This, this is the question : for the future, I want not your acquiescence only, but your persevering, steady, energetic, and united efforts, to carry forward the good work in which we are engaged. For myself, I feel that after twenty-five years of active pro-

fessional life, during ten of which I have been engaged in your service (knowing as I do that the active years of manhood are but few), the time will be arriving when I shall be no longer equal to the very active life I have hitherto led. I regard this Association as formed not for our own little day, but to be handed down to future time ; and it behoves you to provide the means for future labours. We have arrived now at an eminence from which we can take a Pisgah prospect of the future, and I confess I see the distant horizon fair and beautiful, and neither shadows, clouds, or darkness, rest upon it. Let us then pursue our way, rejoicing at the success which has attended us. (Great cheering.) Mr. President, I close my lengthened remarks with a firm hope, that this Association, long after the wind whistles over the sod that covers my lifeless remains, will continue to flourish, and to be the means, for time yet to come, of ministering to the sickness and sorrow of our fellow men. The worthy doctor then resumed his seat under the most enthusiastic and prolonged cheering.

The Chairman again rose and said—The allusions which Dr. Hastings had made to the benevolent fund made this a very fit opportunity for fulfilling a promise which he had made in the afternoon, by introducing a toast having special reference to that subject. It could hardly be necessary to say much in commendation of so laudable an object. The profession to which they belonged were exposed to more casualties, to greater chances and changes of fortune, than any other. Many men who had flourished—and flourished greatly, too, in their day—had left unprovided widows and helpless orphans (hear, hear) ; while many others, who had never flourished to a like degree, had fallen into a state of hapless poverty and destitution. (Hear, hear.) It was on behalf of those that he now made this appeal, for it was for their relief that the benevolent fund was designed. It was brought forward in the morning as a substantial motion, that all the members of the Association should subscribe to the fund ; but to that proposition he did not assent, because he felt that whatever was done in the way of charity should be done voluntarily, and should not be furthered in any way that would have even the appearance of compulsion. He was, however, exceedingly glad to take this opportunity of urging the claims of the fund upon the attention of the members, and he was quite sure he should not do so in vain. A box would be handed round to receive the contributions of the members, and the Secretary would be happy to receive the names of any gentlemen who might be disposed to assist by an annual subscription. He called upon them to drink

success to "The Benevolent Fund." (The toast was very warmly received, and a great number of gentlemen contributed to the fund, both as donors and annual subscribers.)

The Chairman said—The next toast was "The President Elect," and, as surgeons, they might well be proud of such a man as Mr. Hey. There was no talent which a surgeon ought to have that he did not possess, and he enjoyed not merely an English but an European reputation. (The toast was responded to with very great applause.)

The Chairman.—In doing honour to the future, they must not forget the past; and there were two gentlemen, now here, who had already presided over the meetings of the Association. He was sure they would receive their names with every demonstration of respect and regard, when he mentioned "Dr. Boisragon and Dr. Barlow, Vice-Presidents of the Association," whose healths he now asked them to drink with three times three. (The call was promptly responded to, and the toast was loudly cheered.)

Dr. Boisragon returned thanks, expressing his regret at the absence of many of his colleagues, who would have discharged the duty with more ability than himself. He heartily congratulated the members on the success which the Association had enjoyed, and paid a well-deserved compliment to Dr. Hastings, to whom this success was so mainly owing.

The Right Worshipful the Mayor of Exeter rose and said—He felt, when their President had proposed the last toast, that there was one which ought to have preceded it. If he were not to add another word, but merely point towards the chair, they would readily understand his meaning, and would give to it an enthusiastic and spontaneous response. (Cheers.) Their election of Mr. James to the distinguished office of President of this Association spoke far more eloquently to his praise than any thing which he could say. He would not enlarge upon his professional skill and ability, nor upon those qualities of heart and mind which endeared him to all who knew him, but would call upon them at once to drink the health of "The Chairman," with nine times nine. (The call was responded to in a way which unequivocally expressed the feelings of the meeting, and the cheering was repeatedly renewed.)

The Chairman briefly returned thanks, expressing his deep sense of the value and importance of the Association, and his anxiety to do whatever lay in his power to promote its objects. He regretted the absence of Dr. Blackall, who, had his state of health permitted, would undoubtedly have filled that distinguished position in connection with the Association which he now

occupied. There were very few men, even in the metropolis, who were entitled to rank higher in the profession than Dr. Blackall, who had won for himself that which he so well deserved—the esteem and the love of all who had the advantage of knowing him. He would now beg to propose the health of "Dr. Blackall the Patron, Dr. Tuiller the President, and the South-Western Branch of this Association." (Cheers.)

Dr. Tuiller returned thanks, and expressed his regret at the little which he had hitherto done in furtherance of the objects of the Association. He was, however, fully convinced of its importance, and should endeavour to be more diligent in future.

The Chairman gave the health of "Dr. Black:" which was warmly received, and acknowledged by that gentleman in suitable terms.

The Chairman next gave the managing committee, "Dr. Pennell, Dr. Shapter, and Mr. Pridham." They were much indebted to these gentlemen for their exertions in making arrangements for this meeting, and he was sure they would gladly shew them this mark of respect. In reference to one of them, Dr. Shapter, they must remember not only what they had received, but what they had yet to expect. (The toast was loudly cheered.) Dr. Pennell returned thanks, confessing that the members were but little indebted to him, the arrangements having been almost wholly made by Dr. Shapter and Mr. Pridham. Dr. Shapter was loudly called for, and also briefly acknowledged the toast.

Mr. Turner, of Manchester, gave the health of "The Ladies;" and this having been duly honoured, the members adjourned to a conversational meeting at the subscription rooms, where the proceedings of the anniversary terminated.

## SUBSCRIPTION FOR A MONUMENT TO BARON LARREY.

IN the Gazette Médicale for August 6th, is a letter, bearing the signatures of MM. Casimir, Broussais, Michel Lévy, and E. Millon, proposing that a subscription may be set on foot to erect a monument to the late Baron Larrey, as was done three years ago for M. Broussais. They request that the appeal may not be confined to France, but extended throughout Europe; "for the name of Larrey," they say, "has found admirers wherever science and humanity have obtained honour and credit; therefore, let the monument which we desire for him, be the produce of an European subscription. A crowd of our brethren entertain the same wish. It is the duty of medi-

cal men to guard the honour of their profession; and statues and monuments are but little common among them: happy is the age which has occasion to raise them!"

We may mention that M. Begin, first professor at the Val-de-Grâce, has just been elected to the post of inspector general and member of the "Conseil de santé des armées," in the place of Baron Larrey.

TYPHUS FEVER IN PARIS.

FOR six weeks or two months, typhus fever has raged in Paris to as great or greater extent than it did in the year 1831. It is not confined to the hospitals, where several wards are filled with persons suffering under it, but it is extensively spread throughout the city, in the middle classes. There being none of the usual causes of such epidemics present, in the distress of the lower classes or the bad nature of the food, it has been attributed, though perhaps with insufficient reason, to the dry and hot weather which has prevailed for three or four months. The disease follows pretty much its ordinary train of symptoms, with the exception that many of the patients present a marked bilious state, and have a great disposition to vomit bile, which is excited by the least movement or cough. But the course of the affection appears to undergo no great change from the development of these phenomena; and it is said that in spite of the number of persons severely affected, the average of mortality is not greater than is usual in this disease.

NATIONAL VACCINE INSTITUTION.

A MEETING of the Medical Board of the National Vaccine Institution was held on Tuesday the 9th instant, for the purpose of appointing a successor to the late Mr. Gillham, resident medical superintendent of the Institution. The choice of the Board, consisting of Sir Henry Hallford, Bart., Dr. Holland, and Anthony White, Esq. President of the Royal College of Surgeons, fell upon Mr. Tomkins, vaccinator at the Surrey station; and Mr. George Simpson, surgeon, of Bedford Street, Bedford Square, was elected to the latter appointment, which thus became vacant.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, August 5, 1842.  
S T. Smyth.—J. K. Slater.—J. Thompson.—W. Cooper.—T. H. King.—R. R. Storks.—J. H. Barnett.—J. Kitzell.—E. Meek.—S. H. Griffith.—W. Jones.

Monday, August 8, 1842.

J. Brigham.—W. Wiblin.—B. Wood.—J. B. Haig.—G. F. Webb.—W. Hoblyn.—E. D. Doyle.—F. P. Hoblyn.—N. Naftel.—T. Allen.—C. Davis.—J. Manning.—J. D. Strang.

Friday, August 12, 1842.

E. Wardley.—G. Adams.—W. P. Stiff.—A. Lloyd.—W. Skelding.—T. Martin.—F. Anderson.—C. Miller.—R. Irwin.—J. Jennings.—A. Furlong.—J. Hewitt.

Monday, August 15, 1842.

C. Jukes.—R. C. Russell.—J. Richardson.—W. O. Barker.—T. W. Challinor.—J. Briscoe.—T. Taylor.—T. J. M. Mosgrove.—W. A. Sumner.—J. B. Fletcher.—G. Cronyn.—W. A. James.—R. Wilson.—R. W. Moore.

Omitted in the List of the 25th of July: O. H. Fox.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, Aug. 11, 1842.

J. B. Carlill, Hull.—W. Stedman, Godalming.—J. L. Sweet, Tiverton.—F. G. Sadd.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, August 6, 1842.

Small Pox .....	6
Measles .....	32
Scarlatina .....	31
Hooping Cough .....	18
Croup .....	8
Thrush .....	13
Diarrhoea .....	40
Dysentery .....	8
Cholera .....	9
Influenza .....	1
Typhus .....	30
Erysipelas .....	2
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	147
Diseases of the Lungs and other Organs of Respiration .....	220
Diseases of the Heart and Blood-vessels ....	20
Diseases of the Stomach, Liver, and other (Organs of Digestion) .....	38
Diseases of the Kidneys, &c.....	7
Childbed .....	4
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	4
Diseases of Joints, &c. ....	0
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	3
Diseases of Uncertain Seat .....	114
Old Age or Natural Decay.....	56
Deaths by Violence, Privation, or Intemperance .....	24
Causes not specified .....	3
Deaths from all Causes .....	690

NOTICES.

We should have inserted Mr. R.'s note, but that it has already appeared elsewhere. "Philomathes" in our next.

WILSON & OGILVY, 57, Skinner Street, London.



# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, AUGUST 26, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Continued fever, concluded. Treatment.  
Small-pox. Its essential symptoms.  
Distinction into discrete, and confluent.  
Periods and modes in which it proves  
fatal.*

THE treatment of continued fever has been, at all times, a stumbling block to young practitioners; and a subject of dispute even among physicians who have built it upon their own experience. Before I attempt to trace out any plan, or to lay down any principles, for your guidance, it may be useful to enquire how it happens that the practice in this disease has been so fluctuating and unsettled.

In the first place, then, it is very difficult to estimate the value and efficacy of any particular plan of treatment, and still more of any particular remedial substances, in this disease. Continued fever, like other disorders which run a definite course, and have no direct or necessary operation in spoiling the structure of vital organs, has a strong natural tendency to terminate in health. We see this tendency when the disease is left entirely to itself, and it equally exists when remedies are employed to regulate its course, or to abbreviate its duration. No one can doubt, who has had much experience in fever, that this tendency is sometimes thwarted by the *nimia cura medici*; and that patients get well in spite of the well-meant but mischievous interference of the doctor. This tendency to recovery is a constant source, therefore, of fallacy in our observations upon the behaviour of this disease under different plans of treatment; and upon the effects and utility of remedies. It leads us, too often, into the danger of

ascribing to drugs what is really due to the workings of nature; of confounding antecedents and sequences with causes and effects; of counting recoveries as cures. And this danger is increased by the circumstance that continued fever, although it observes a certain definite course, is nevertheless liable, even when left altogether to itself, to sudden and remarkable changes in the symptoms, sometimes for the worse, and sometimes for the better; and often we cannot perceive any obvious reason for these fluctuations. But if this happens when no medicine is given, so also will it happen when the disease is submitted to treatment; and it requires more than a little care and discretion to avoid ascribing the changes which so occur to the remedy which was last employed. For example, the abatement or cessation of *headache*, after a few days have elapsed, is a natural phenomenon: whereas an inexperienced or a careless person might easily persuade himself that it had yielded to his method of treatment, and that it was a favourable omen: neither of which conclusions would, however, be warranted by the circumstance upon which it was founded.

There is yet another source of difficulty connected with this subject. I have shewn you that not only individual cases of fever, but different epidemics, vary much in their character; so that a plan of treatment which was well suited to one epidemic, may be improper and even hurtful if indiscriminately applied in another.

These considerations may serve in some measure to teach us how it has happened that so many different, and sometimes opposite, remedies and modes of treatment have been recommended by different practitioners for the cure of this disorder. The tendency to a termination in health was very plainly visible in the epidemic fever in Ireland, to which I have more than once referred. The mortality among the patients who were placed in sheds upon straw, with very little medical care, and even without any great

personal attention from others, was very small indeed. No one can form even an approximate judgment of this tendency, who has not seen the disease under several varieties of practice. Doubtless one rule which we derive from a clear perception of the same tendency is, that we should *not* interfere *unnecessarily*. Ασκειν περι τα νοσήματα δυο (says Hippocrates) ωφελειν, η μη βλαπτειν. There are two things to be considered in the treatment of disease: first, that we do the patient *good*; secondly, that *at least* we do him *no harm*. In all these exanthemata, he must be reckoned the safest and the best practitioner who knows when to abstain from acting, as well as when to act; in other words, who has learned when, and to what extent, the case may be left to the salutary processes of nature.

However, there is an opposite error to that of mischievous activity. The tendency to recovery which manifests itself under different modes of treatment, and even in spite of opposite modes of treatment, has induced, in some minds, a degree of scepticism as to the utility of any remedies, that may easily be carried too far. It does not follow, because the majority of patients under continued fever would at length emerge into health, although no remedial measures were employed, that the disease ought therefore to be abandoned to what Cullen calls the *vis medicatrix naturæ*. It is not quite correct to say, with the older pathologists, that the whole disorder is merely an effort of nature to throw off something noxious to the system, and *therefore* is not to be interfered with. The true view of the matter I apprehend to be that which a toxicologist might take. The disease is produced by a poison of which the injurious impression upon the animal economy at length ceases, or passes off, of itself; in the same manner, only more slowly, as the influence of a dose of opium will spontaneously pass away. But during the natural course of the fever, as in many other cases of poisoning, morbid processes are apt to be set up, which, if suffered to proceed unchecked, would inflict irreparable injury upon important organs, and which are fairly within the scope of remedial management. Our object must be, when the fever is once established, to conduct it to a favourable close; to "obviate the tendency to death." Upon this point I agree most entirely with Pitcairn, who, being asked what he thought of a certain treatise on fevers, declared, "I do not like fever curers. You may *guide* a fever; you cannot *cure* it. What would you think of a pilot who attempted to quell a storm? either position is equally absurd. In a storm you steer the ship as well as you can; and in a fever you can only employ patience and judicious measures to meet the difficulties of the case."

When some immediate change ensues in the symptoms or in the feelings of the patient upon the administration of remedies that are generally followed by sensible effects, we are warranted in ascribing the change to those remedies. But even here comes in the fallacy already noticed, arising from the sudden and *spontaneous* changes that are apt to occur in fever: and this fallacy is to be got over only by multiplying our observations.

After all, the best guide that you can have in determining upon the general principle of treatment in a given epidemic, or even in an individual case, is that which Dr. Alison has so ably enforced in his lectures and in his writings upon this subject. I mean the observed tendency to this or that mode of dying. The manner and circumstances of the deaths are of more practical importance than of the recoveries.

After briefly passing in review some of the principal remedies that have been employed and recommended for this disease, I propose to sketch the plan which I am myself in the habit of pursuing in the management of fever-patients.

It was once a favourite practice with physicians to attempt to *cut short* the fever at its outset: and the two expedients which were chiefly relied upon for that purpose were *emetics*, and the *cold affusion*. They have both of them, in this country, gone very much out of fashion. In truth, neither reason nor experience encourages us to look for such a result from such measures. If fever depends (as I believe it does) upon a poison in the blood, it is not to be dislodged by the act of vomiting, nor washed out by the forcible descent of cold water upon the skin: and in the few instances in which the one or the other of these remedies may have *seemed* to arrest a fever, or to check its progress, that effect has always occurred at the very commencement of the complaint: so that we cannot be sure (and the probability lies the other way) that these were really cases of fever at all, or that they would not have ceased even if nothing had been done for them. Perhaps emetics may, in the present day, be too much neglected. I have no notion of their *stopping* the fever; but when given early, especially if gastric disturbance is a prominent symptom, they are sometimes followed by a marked abatement of many morbid sensations. "It is astonishing," says the observant Sydenham, "how it happens, that a vomit, which does not produce either a large or a morbid discharge from the stomach, should so materially relieve the nausea, restlessness, anxiety, and furred tongue of the patient."

The cold affusion is not more effectual in cutting fever short than the treatment by emetics; and it has these great disadvantages, that it fatigues and alarms the patient: and

when the vital powers are naturally feeble, or are much depressed by the disease, the very shock of the affusion may be attended with injurious consequences.

A modification of this expedient is, however, often of great use in abating the morbid heat, and soothing the uneasy feelings of the patient. I mean the practice of cold or tepid *sponging* of the surface. This is one of the remedies which, when the symptoms appear to indicate it, deserves to be tried; and the propriety of continuing or of discontinuing it may be determined by a very simple test; namely, the feelings and wishes of the patient himself respecting it. It is most adapted to the more inflammatory, and least adapted to the more typhoid types of the malady.

Great controversies have been maintained in regard to the effect of *blood-letting* in fever. They who hold that the fever consists in a general disturbance of the system, growing out of some local inflammation, and they especially who believe that continued fever is nothing else than inflammation of the brain and its membranes, would naturally seek to cure it by the remedies of inflammation. But although local inflammation, and even inflammation of the brain, is very apt to spring up in the course of continued fever, there is no reason for thinking that inflammation *any where* is *essential* to the fever; but very much reason for the opposite opinion. The active use of blood-letting has been in favour and out of favour, with the medical world, again and again: and this very circumstance would of itself make us doubt the propriety of its indiscriminate adoption.

The late Dr. Armstrong gave a strong and unfortunate impulse to the practice of free blood-letting in continued fever, by the publication of his well-known and ingenious treatise on the disease. I have no doubt that great mischief was done by that work. I may say so without scruple, since Dr. Armstrong is gone, and neither his feelings, nor his success, can be hurt by the expression of such an opinion: and I do so the rather, because it is well known here that Dr. Armstrong saw reason, as his experience increased, to qualify those views respecting the nature and management of fever, which his earlier observation of it in the country had led him to form. This change in his sentiments was probably justified and produced by a change in the character of the fevers that he witnessed; but it does not appear in his book. You have heard me state already that whereas the fevers which occurred in London for some time previously to the year 1831 or 1832, not only bore, but required the abstraction of blood, in some way or another, since that period, and especially since the epidemic cholera visited us, it has been necessary to abstain,

whenever we could with safety, from taking blood at all; and still more necessary, even if we take away blood with one hand, to uphold the patient with the other: while, in the former period, wine and stimulants of all kinds seemed generally superfluous, if not pernicious.

Dr. Williams, of St. Thomas's Hospital, has shewn, very clearly I think, in his recent publication on "*Morbid Poisons*," that the evidence against the efficacy and the safety of bleeding in continued fever—of bleeding largely, I mean, from the arm—far outweighs that in its favour: and I venture to advise you, as the result of all that I have seen of the disease in London and elsewhere, *not* to draw blood from a vein, even early, *merely* because the disease is or appears to be *fever*; not to order venæsection unless there be some other manifest reason for it—unless, *i. e.* the febrile symptoms run unusually high, or unless some local inflammation is unequivocally present: and, when you do bleed, do not take a drop of blood more than seems absolutely necessary to answer the desired end. Bleed your patient, therefore, if at all, in the upright posture.

*Purgatives.*—What are we to say in general with respect to them? *This*, I believe—that the intestines should be cleared by an active aperient in the outset; and that laxatives should be continued if the bowels do not act every day without them. When the typhoid type is strongly marked, and when the symptoms indicate ulceration of the intestinal glands, purgatives are not to be pressed.

Much contrariety of opinion has prevailed also among practitioners, and does prevail, about the administration of *mercury* in this disorder. Without attempting to strike the balance between these conflicting judgments, it is my business and duty to state my own belief, to tell you what is the result of my own observation, upon this and other disputed points. I must repeat, then, that my practice has altered, in several particulars, within the last few years. In the fevers which I treated, or saw others treat, in London, prior to the breaking out of the present epidemic, mercury, in one shape or another, was almost constantly prescribed; and a great number of the patients were brought, sooner or later, under the specific operation of that mineral: and in these patients (with one exception only, where the mercury appeared to do neither good nor harm) a *decided improvement* was almost immediately apparent upon the supervention of soreness of the mouth; and all such patients ultimately recovered. I am aware, however, and I wish you to be aware, of an alleged source of fallacy in this matter. The gums, in that variety of fever to which I am at present referring, did not readily take on the mercurial action; and it *might be* (though

such is not my own impression), it might be that the affection of the mouth by mercury was attributable to the mildness or to the cessation of the disease, rather than the cessation of the disease to the effects of the mercury upon the system: that the improvement was the cause, and not the consequence, of the mercurial action.

In the form of fever that is *now* epidemic (1838), I do not think mercury so proper. Last year the spotted fever broke out in a patient of mine while he was in the hospital, and while his gums were sore. I found, upon inquiry at that time, that of twelve fever patients who had been recently treated in the hospital, by my colleagues and myself, with mercurials in greater or less quantity, four had died, in all of whom the gums were affected: whereas, of sixteen others, who took no mercury, three only died, and of these three, one was pulseless at her admission, from uterine hæmorrhage, and the other two were so feeble and exhausted that they were scarcely able to swallow. I should give mercury very cautiously, therefore, if at all, in this typhoid variety of the fever.

Besides a strict enforcement of the antiphlogistic regimen, my own mode of treating continued fever is somewhat of this kind. I am always desirous that the patient's hair should be cut off. The mere removal of it is often attended with benefit; the headache and confusion of thought are relieved, and the patient is calmed. We can then also, with much greater convenience and effect, apply cold washes to the head. Patients sometimes demur to this shaving of their heads: but they generally consent if you explain to them that their hair will at length fall off, in consequence of the fever; and that the head, if on that account only, had better be shaved at once. The head and shoulders should be somewhat raised, and thin strips of linen, kept constantly wet with some cold lotion, should be continually applied upon the forehead and scalp. It should be the business of one person to attend to this. You would be surprised at the rapidity with which the cloths sometimes dry.

Now with regard to this remedial measure you need not have any difficulty. It will do good, and should be steadily employed, as long as it is *grateful to the feelings* of the patient; and it *will*, generally, be pleasant and agreeable to him so long as the head remains morbidly hot. If the temperature of the scalp be not above the natural standard, and especially if the cold application makes him shivery or uneasy, and gives him annoyance instead of comfort, then it must be at once discontinued.

If the patient suffered intense headache, and his face was flushed, and the heat of the surface great, and he was wildly delirious, and his pulse was full and hard, I might

perhaps deem it right to take blood from his arm, while he sat up. But even under these circumstances I should generally think it better to apply leeches to his temples, or behind his ears, or to remove a few ounces of blood from his neck, by means of cupping-glasses, and at the same time to ply assiduously the cold lotion.

If the bowels have not been already purged by nature, or art, it is right to give three or four grains of calomel at once, and to follow this up by a black dose. After that I was formerly in the habit of prescribing, in the early periods of the fever, unless the bowels were irritable, a pill composed of two grains of calomel with two grains of James's powder, every six hours; washing it down with a common saline draught. In hospital practice I frequently omitted the saline draught; allowing the patient to drink toast and water, or barley water, as often as he wished. If there was diarrhoea, or early prostration, I gave, instead of the combination just mentioned, five grains of the *hydrargyrum cum cretd.* At the same time I carefully investigated the state of the abdomen; and if I found tenderness at the epigastrium, or in the cæcal region, in both of which situations tenderness was common, I applied, over the tender spot, from six to ten leeches, and covered the leech-bites with a light poultice. If the diarrhoea ran on profusely, I added to the *hydrargyrum cum cretd.* a certain quantity of Dover's powder, or of the extract of poppy.

In those forms of fever (whereof the prevailing epidemic affords you a well-defined specimen) in which there is a strong and early tendency to typhoid symptoms, a signal loss of strength, a confused and dusky countenance, a mottled state of the skin simulating the eruption of measles, a dark dry brown tongue, a feeble pulse—in these forms I begin very early to give the patient a full allowance of beef tea; and if the typhoid and nervous symptoms become more pronounced, I add ammonia, Hoffman's æther, and, what is better still, wine; and I omit the mercury.

Under this kind of management the patients will often go on, in a doubtful state, for some days, and at length begin to recover. Many of them, especially in the more typhoid varieties, sleep heavily, as the disorder passes slowly of.

There is one point in the treatment of fever, of exceeding importance, and of some nicety: I mean the use of *opiates*. If they are given inopportunistly, they are apt to puzzle and perplex the case. You do not know how much of the disposition to coma is owing to the disease, and how much is the consequence of the remedy. Again, you may easily *augment* the natural tendency to coma, and lull your patient into a fatal stupor. But, when judiciously adminis-

tered, opium will often save a patient who would inevitably sink without it.

It is in that form of fever which the French call the *fièvre ataxique*, when the patient is affected with delirium, restlessness, wakefulness, and spasm, that opium is so beneficial. The condition of the patient resembles that of a person in *delirium tremens*. It is said that these symptoms occur most commonly among patients of those ranks of life that are above the lowest rank; and it probably is so: but they are apt to take place in any patients, high or low, rich or poor, who have had the mind overwrought, and the nervous system unstrung, whether by dissipation and intemperance, or by anxiety of any kind. Sydenham was quite aware of the existence of this particular set of symptoms, and of the remedy for them. Of all these symptoms, *sleeplessness* is the most urgent. Dr. Grattan and Dr. Latham have both written in praise of the same opiate treatment, under such circumstances, as was recommended by Sydenham. Dr. Grattan observes, with great truth, that two or three nights, spent in restless delirium, are followed by the worst consequences; and that patients who pass *three* nights in succession in that way, almost invariably die. If the symptoms be well marked, the best mode of proceeding is to give a tolerably full dose of opium in the evening; one-third of a grain of acetate of morphia is a common prescription with me. The amendment of the patient, on the succeeding day, is often very striking. Unless the same symptoms recur, it is better, I think, not to *repeat* the anodyne. But, as Dr. Latham cautions us, "there are cases where the indications for the employment of opium are *doubtful*. Wild delirium, and long wakefulness, and a circulation weak and fluttering, seem to call for a considerable dose of opium. Yet, withal, there is a certain jerk in the pulse, so that we cannot help *suspecting* that the bloodvessels have something to do with the sensorial excitement. Under such circumstances, I have certainly seen (says he) twenty minims of laudanum produce tranquil sleep, from which the patient has awoken, quite a new man. But I have also seen the same quantity produce a fatal coma, from which he has never been roused. Now (continues Dr. Latham) since it is a fearful thing to strike a heavy blow in the dark, where the alternative is of such magnitude, it is the safest and the best method to administer a small dose, at intervals of an hour or two; so as to stop short of actual mischief at the first glimpse of its approach, or to be led, by a plain earnest of benefit, to push the remedy to its full and consummate effect. Many doses may be required for this purpose; but we shall see, after the first or second, whether to go on, or to desist."

When, as is sometimes the case, the stress of the disorder falls upon the thorax, and there is much dyspnoea, with the sounds that denote inflammation of the bronchial membrane, or of the pulmonary substance, leeches or cupping-glasses may be applied to the chest; and, in milder cases, a blister, or a mustard cataplasm.

These remedies—cold to the shaven head; the local abstraction of blood wherever there happens to arise evidence of local inflammation; an active purge at first, and mild aperients afterwards, if the bowels are confined or sluggish; moderate astringents, if there is much or urgent diarrhoea, a few grains of Dover's powder for example, or of the extract of catechu; opium in a more efficient dose, when the nervous symptoms are prominent, particularly sleepless delirium and restlessness; in certain cases small and repeated doses of some preparation of mercury; and in certain cases, *early* support by animal broths, and even by wine—these remedies, adapted to the particular circumstances of individual cases, form the staple of the treatment of continued fever, according to the best of my judgment and experience.

After what has been said, I need scarcely again admonish you to study carefully, not merely the symptoms of any particular case to which you may be called, but the general character of the fevers that are at the same time prevalent, and the manner of dying in the fatal cases. If you find that they who die, die chiefly in the way of asthenia, that will be a strong reason for caution in respect to the removal of blood, and for the early employment of beef-tea, and other means of support. In the form of fever which has of late years been common in the most crowded and unhealthy parts of London, I am sure that the risk of beginning this sustaining treatment a little too early is much less than the risk of commencing it a little too late. If plenty of beef-tea does not suffice, you must give the patient wine, and that sometimes to a considerable amount, or even brandy; the egg-flip of the Pharmacopœia for instance, the *mistura vini gallici*. The object is to keep him alive, to keep the heart in motion, until the depressing influence of the exciting cause of the disease shall have passed by. If the wine should flush or excite him, or render the pulse hard, it must be diminished in quantity, given less frequently, or omitted altogether. If there be indications of local inflammation—pain (for example) in the cæcal region, increased by pressure—leeches may be used, and wine given at the same time. There is nothing inconsistent in such mixed practice. We seek to remove the local inflammation by unloading the capillary blood-vessels of the part, while we sustain the general powers of the constitution which are ready to sink.



The great art of getting a fever patient through a bad attack, is to have him judiciously and perpetually watched, by night and by day. The remedy that is proper one hour may do harm if pushed during the next. And there is another reason, which I may mention *en passant*, why the sick person should never be left alone, even for five minutes. I have heard of more than one or two instances, of patients, in the delirium which attends the disease, getting out of bed, and out at the window, during the temporary absence of their nurse, and perishing from the fall.

If the patient relishes and wishes for the beef-tea, or the wine, that is no small warrant of the propriety and usefulness of its administration.

A word or two more may be proper, even in this cursory sketch, respecting certain incidental points of practice that are apt to arise.

Often, when there is no longer any detectible uneasiness produced by pressing the belly, the diarrhoea will persist, and *meteorismus* will come on; a tympanitic distension of the intestines with gas. When this happens, especially in the latter periods of the fever, a large *blister*, laid over the abdomen, has often very happy effects, both upon the diarrhoea and the meteorismus. The diarrhoea, when very urgent and obstinate, may often be checked by opiate *enemata*. In some cases I have recently found catechu of great use, in these long-drawing forms of diarrhoea during fever.

Again, if the patient sinks into profound coma, a blister should be applied to the shaven scalp. The sick man will sometimes awake from deep stupor while the blister is still rising.

It is always a matter of importance, as I stated before, to inquire carefully, every day, into the condition of the bladder of these fever patients. In the state of stupor and indifference in which they often lie, they appear not to be sensible to the want of passing the urine, which collects in the bladder, and distends it enormously; not only increasing the present hazard of the patient, but laying the foundation, sometimes, of future disease of the kidneys, in case he recovers from the fever. You must not take the assurances of the nurses upon this point. They will often tell you that the patient has made plenty of water, when in fact the urine has been dribbling away from him, overflowing, while the bladder is stretched to the utmost. Feel, therefore, with your hand, and percuss the hypogastric region, as well as that of the cæcum, at every visit.

It is requisite, too, that the under surface of the patient's body should not only be kept scrupulously dry and clean, but be *looked at* every day, or twice a day. If the projecting points, the hip bones, the sacrum,

the shoulders, the elbows, should become *red*, that is a sign that they are likely to slough or ulcerate. This evil consequence of continued pressure upon parts of which the vital power and healthy tone are lowered, may often be prevented by washing the erythematous spots with brandy. Should the skin be already broken, the place may be covered with soap-plaster. An adjustment of pillows and of posture—or the water-bed—may sometimes supersede the necessity of these local expedients.

When ulceration of the mucous follicles perforates the bowel, that catastrophe does not *always* so distinctly declare itself in fever, as in other cases. I have seen such perforation, and its resulting peritonitis, when no complaint of pain had been made by the patient, so great was his insensibility. In general, however, the accident is denoted by symptoms which cannot be mistaken. When it does occur, there is but little chance of the patient's recovery; and that little will be best husbanded by the adoption of the plan of treatment which I formerly laid down: opiates, to check the peristaltic movements of the intestine; and a rigid adherence, for some days, to the horizontal posture.

I have seen a few instances, in which an oedematous swelling of one leg and thigh has occurred in the advanced stage of fever, like that which is incidental to parturient women, and dependent upon the same cause—inflammation and obstruction of the great vein that returns the blood from the limb towards the heart. I believe that the inflammation extends itself, in such cases, from some of the smaller veins of the mesentery, and is excited in them by the intestinal ulceration. Fomentation of the affected limb comprises all the remedial treatment which this accident requires or admits of.

The management of the patient during convalescence is scarcely of less importance than during the progress of the fever. The chief danger is, that his desire to be allowed to get up, and his wish to eat animal food, should be too soon indulged. The latter of these errors is more frequently the cause of a relapse than any other circumstance; and relapses are often more perilous and difficult to remedy than the original malady. You must be prepared, therefore, to withstand the solicitations of the patient and of his friends, who think that if strength be wanting, strong drinks, and plenty of meat, are the things to impart it. Until the tongue is quite clean and moist, and of its natural colour, and the pulse has lost all its hardness, and the skin its excess of heat, the patient must be kept to broth, jellies, puddings, and preparations of the well-known farinaceous articles of food. Then he may begin with some boiled white fish, and so gradually eat his way, through chicken, and a mutton-chop, to his ordinary diet again.

Such, I say, is the general plan of treatment which some observation of this disorder has persuaded me is the best. Summarily expressed, it consists in the exercise of incessant vigilance, and the adoption of the proper remedy at the proper moment. It lies between a timid abandonment of all known resources, and a meddlesome rashness in applying them. The flame of life may be suffered to expire for want of timely succour, by the practitioner who folds his arms, and looks on; as it may be rudely extinguished by a restless or routine interference which has no definite or intelligible purpose. Boerhaave, in the preface to his *Aphorisms*, professes that he knows of nothing which can be fitly termed a *remedy*, "quin solo tempestivo usu tale fiat." In fevers the wisdom of this maxim is eminently conspicuous. The rational objects of treatment are, to mitigate the urgency of symptoms that cannot be wholly subdued; to redress (so far as art may redress) those dangerous complications which are incidental but not essential to the disease; and to aid the conservative efforts of nature, when these manifestly languish and fail.

Dr. Williams holds that enemata of warm water and syrup of poppies will do all that can be done beneficially. For some time he lost only one patient out of sixty-three thus treated. This was a most encouraging result. But then, when the fever changed its type, as it did about the period of the arrival of the epidemic cholera, he lost one in every four or five: a very large mortality. These facts illustrate, in a strong manner, the necessity, which I have so often endeavoured to inculcate, of taking into the account, when we would estimate the value of a particular remedy or plan, the difference which obtains in different epidemics, whether bad, good, or no treatment at all be adopted. A far surer method is to compare (if you would experiment at all) two or more different modes of practice in different cases of the same epidemic. Thus Dr. Latham, finding during one season that his wards were full of fever, yet that the type was so mild that scarcely any died, thought this a favourable opportunity for trying whether mercury had any beneficial operation upon the disease. Accordingly he treated half his cases with small doses of the *hydrargyrum cum creta*; and the other half with the *liquor ammoniæ acetatis*, and so forth, and no mercury; and he found that the patients in the first of these classes were, on the average, convalescent sooner than in the last. Chomel fancies, from some trials, that the chlorate of soda is a useful remedy, in addition to the general plan of management; but farther experience seems wanting to settle this question.

I pass, without pausing, from the consi-

deration of continued fever, to that of *small-pox* or *variola*: a disease, fortunately, less common in this country than it used to be, yet still sufficiently frequent and formidable to require that we should acquaint ourselves with the phenomena it is accustomed to present; and very prevalent here, as it happens, at present (1838). I have already mentioned, by anticipation, several points of its history.

This frightful disease sets in with smart febrile symptoms: rigors, followed by heat and dryness of skin, a hard and frequent pulse, pain in the epigastrium, with nausea and vomiting, and headache. Sometimes wild delirium, sometimes convulsions, mark its outset. Then, to use the words of Cullen's definition, "tertio die incipit, et quinto finitur, eruptio papularum phlegmonodearum, quæ spatio octo dierum, in supurationem et in crustas demum abeunt, sæpe cicatrices depressas, sive foveolas, in cute relinquentes."

When small-pox is fully formed, it cannot be mistaken for any other complaint: but it is of some importance to recognize it at its very commencement, for the force of the impending disorder may sometimes be lessened by judicious measures adopted at that early stage. The symptoms, however, that mark the outset of all febrile diseases are necessarily very much the same. If the pyrexia sets in when small-pox is prevalent in the neighbourhood, if the person in whom it occurs be an "unprotected" person (*i. e.* one who has neither been inoculated nor vaccinated previously), and especially if he is known to have been exposed, within from nine or ten days to a fortnight, to the contagion of variola, we may well suspect that the disease will turn out to be small-pox, and act upon that suspicion.

Nevertheless there are some symptoms which, being common in the commencement of variola, and not common at the beginning of continued fever, or of the other exanthemata, may assist the early diagnosis. Vomiting is one of these; pain of the back another. When these symptoms are violent, they usually usher in a severe form of the disease. The same may be inferred from a continuance of the nausea and vomiting, after the coming out of the eruption, which is very unusual. Heberden noticed that acute pain in the loins was almost always followed by a severe disorder; that pain higher up, between the shoulders, was of better augury; and that it was to be reckoned in all cases a good sign, if there was no pain of the back at all. Early delirium, stupor, or convulsions, announce severity in the subsequent course of the malady. Yet not always, especially in children. Within the last month I was asked to see a child which had been suddenly attacked with convulsions, followed by coma.

In due time the eruption of variola appeared, and the disease ran a mild course, with little aid from medicine, although the child was previously unprotected.

The peculiar eruption almost always begins to shew itself on the third day of the fever. The earlier it comes, the severer generally does the disorder prove. In judging of the date of the eruption, you must bear in mind that parents and servants are apt to state that its accession was later than it was in reality: for the spots are at first so minute that they often escape observation. They also frequently begin to come out in the night; and the morning of the second day of the eruption is called the first day.

The eruption comes out first on the face, then on the neck and wrists, and on the trunk of the body, and lastly on the lower extremities. Such is the rule; so that (as is specified in the definition) it does not cease to come out till the fifth day: and it keeps a-head, in that order, throughout the disease. There are, indeed, some exceptions to this rule. Occasionally the spots appear first upon the extremities, but this is very rare. In some instances straggling papule continue to spring up after the main crop is fairly completed; but these stragglers seldom arrive at the same size with the others.

The pimples, or papule, ripen gradually into *pustules*, the suppuration being complete by their eighth day; and on that day the pustules generally begin to break, and crusts or scabs to form. In four or five days more these scabs are falling off. There are some variations in all this also. In children, the crusts are sometimes visible on the seventh day; and in adults, where the disease is severe, they sometimes do not begin to form till the ninth day. In all cases some of the pustules are liable to be prematurely broken, by accident, or by the patient's scratching; and these will crust over earlier than they otherwise would have done. So that in fixing the period of incrustation, you are to regard those pustules only of which the natural progress has not been interfered with.

All that I have hitherto been saying, applies, with more or less exactness, to the disease in all its varieties. But its severity differs exceedingly, as I have already hinted, in different cases. Its severity, in truth, is almost always in direct relation to the *quantity of the eruption*. The number of pustules, indicates, in the first place, the quantity of the variolous poison which has been reproduced in the blood. In the second place, it is also a direct measure of the extent to which the skin suffers inflammation. Sometimes there are not more than half a dozen pustules; sometimes there are many thousands. If all these were collected into one, it would be an enormous phlegmon. For both these reasons the system suffers com-

motion, distress, and peril, in proportion to the quantity of the eruption.

When the pustules are very many, they run together; when they are few, they are separate from each other. And this affords a broad line of distinction, which can neither be overlooked nor mistaken, into the *variola discreta*, and the *variola confluenta*. In the one, the pustules are distinct, and of a regularly circumscribed, circular form. In the other they coalesce, and their common outline becomes irregular. Now the discrete form of the disease is scarcely ever dangerous; the confluent form is never free from danger. The distinction therefore is of the greatest importance and interest. To be fully estimated each form must be considered separately.

In the discrete variety, in which the disorder may be presumed to run its most natural course, the eruption is at first, according to the phraseology of Willan, *papular*. The pimples gradually increase in magnitude, but it is not till the third day of their appearance that they begin to contain a little fluid on their summits. For two days after this they increase in breadth only, and a depression is observable in the centre of many of them. The cuticle is bound down there somehow, for a time, to the cutis vera. It is the *eighth day of the disease*, or the *fifth day of the eruption*, before the pustules become perfectly turgid and hemispheroidal. During the time in which they are thus filling up, the face swells; often to so great a degree that the eyelids are closed, and the natural aspect is completely changed or concealed. The skin between the pustules on the face assumes a damask red colour. About the eighth day of the eruption a dark spot makes its appearance on the top of each turgid pustule, and at that spot the cuticle breaks, a portion of the matter oozes out, and the pustule dries into a scab. When this crust at length falls off, it leaves behind it either a purplish red stain, which is still very characteristic of the disease, and which very slowly fades, or a depressed scar, which is indelible. In the latter case the patient, or more properly his skin, is said to be *pitted* with the small-pox, or pock-marked. The swelling of the face begins gradually to diminish after the eruption has become thoroughly pustular.

This is the course which the eruption pursues on the face, where the pustules, even in the discrete form of the disease, are usually thicker set than on any other part of the surface. And it pursues the same course, only two or three days later, upon the extremities, where it also begins later. The feet and hands swell just as the face swelled, but they begin to tumefy as the features begin to subside. Some of the pustules, especially on the extremities, do not burst at all, but shrivel up.

In this, the distinct variety of the disorder, the fever generally ceases entirely upon the coming out of the eruption: the headache, the pain of the back, the vomiting, the restlessness, abate and disappear, the pulse resumes its natural force and frequency, and the skin its natural temperature. About the seventh or eighth day of the eruption there is commonly for a day or two a recurrence of fever. This is called the fever of maturation.

You are to observe that we judge of the eruption as it appears on the *face*. The disease is of the confluent kind, when the pustules are confluent there, whether they be so or not upon the trunk and extremities. Sometimes they are neither strictly confluent nor strictly separate, but stand just thick enough to touch each other, without absolutely coalescing; every pustule preserving its circular outline. In that case the disease is said to be of the *cohering* form. When the pustules are confluent over the whole body, their number is often prodigiously great, and their progress is less regular than in the discrete and milder variety of the complaint.

In the first place the eruptive fever itself is usually more violent and tumultuous in the confluent disease: the disturbance of the sensorial functions is more common and more decided, the sickness more distressing, the pain of the back and loins more severe. The eruption comes out earlier, and more confusedly; the pimples being at first very minute, and crowded together in patches, and not seldom accompanied by a rash like that of scarlet fever, or erysipelas: whereby the diagnosis, in so far as it depends upon the appearance of the skin, is rendered for a while uncertain. I have at present in the Middlesex Hospital a patient in whom the papule of small-pox were, at the outset, so intermingled with the appearances and sensations of urticaria, that I doubted, for twenty-four hours, what the true character of the eruption might be. It is sometimes like that of measles; but the similarity and the uncertainty are soon at an end, for the pimples soon begin to exhibit a fluid on their summits. They do not, however, as they advance, and pass into pustules, fill up so completely as in the distinct form; they are flatter, less plump, more irregularly depressed, and even of a different colour; being at first whitish, and then of a brown tint, and seldom of the yellow purulent hue which is seen in the variola discreta. Sometimes they are even bluish, or purple. In the confluent form there is commonly some abatement of the febrile distress upon the coming out of the eruption, but the remission is much less marked than in the discrete. About the fifth or six day fresh rigors are apt to occur, marking the fever of

maturation. Most of these points of distinction between the two varieties of the disease are well marked in Cullen's definitions. The distinct form he defines thus: "Variola (discreta) pustulis paucis, discretis, circumscriptione circularibus, turgidis; febre, eruptione factâ, protinus cessante." And of the confluent kind his definition is "Variola (confluens) pustulis numerosis, confluentibus, circumscriptione irregularibus, flaccidis, parum elevatis; febre post eruptionem perstante."

But the most important difference between the two forms is in what is called the *secondary fever*, which sets in about the eleventh day of the disease, or the eighth of the eruption, just when the maturation of the pustules is complete, and they begin to desiccate. This secondary fever is slightly marked in the distinct small-pox, and very intense and perilous in most instances of the confluent. It is at this period of the disorder, that death, in the fatal cases, oftenest occurs. Of 168 such cases, recorded by Dr. Gregory, the deaths happened in 27 (nearly one-sixth of the whole) upon the eighth day of the eruption. That, therefore, is the most perilous *day*, as the second is the most perilous *week*. Thirty-two died in the first week, 99 in the second, 21 in the third. The early occurrence of death denotes a peculiar *malignancy* in the disease. The nervous system appears to be overwhelmed by the force of the poison. During the second week the disorder proves fatal, chiefly in the way of apnoea; from some affection of the respiratory passages. After that period the characters of asthenia commonly predominate. The patient sinks under some casual complication, or the powers of life are gradually worn out by so much irritation of the surface, and so large an amount of suppuration.

So much for the ordinary course of small-pox, and of the symptoms that are essential to that disease. There are, however, other concomitant circumstances, with which you ought to be acquainted: and these I will endeavour to specify at our next assembling.

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## LECTURES ON THE DISORDERS RESULTING FROM DEFECTIVE NUTRIMENT.

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ANOTHER instance in which the effects of insufficient nutriment are most painfully felt is in prisoners kept long on a diet of bread and



water. The best proof of the ill effects of such a diet is perhaps to be found in some experiments performed in 1769, by Dr. Stark, on himself; because here they were not aggravated by confinement and the other depressing circumstances that deteriorate the health of prisoners.

These experiments were commenced on the 12th of June; and from this time to the 24th, the Dr. allowed himself 20 ounces of bread and 4 lbs. of water a day: he lost daily 5 oz. 5 dr. in weight. From the 24th of June to the 19th of July, he took 30 oz. of bread and 2 lbs. of water; and lost in weight 6 oz. 10 dr. a day. The next week he allowed himself 38 oz. of bread and 3½ lbs. of water; and during this week increased in weight. He then varied the experiment, by subtracting a certain quantity from the daily allowance of bread, and adding an equal weight of sugar. From the 26th of July to the 3d of August, he took 34 oz. of bread and 4 oz. of sugar; and from the 3d to the 9th of August, 30 oz. of bread and 8 oz. of sugar; the allowance of water being in each case 3½ lbs. a day.

The person upon whom these experiments were performed was, to use his own words, "a healthy man, about 29 years of age, six feet high, stoutly made, but not corpulent, of a florid complexion, with red hair."

Once during the course of these experiments he yielded to his craving for food of other kind, and ate 4 oz. of meat, and drank 2 or 3 glasses of wine; but otherwise he adhered rigidly to the diet. On the 9th of August he was only two pounds less in weight than when he commenced his experiments; but scurvy was making its appearance.

The following are some of the entries made in his journal about this time:—

"On the 11th, I ate 24 oz. of bread and 16 oz. of sugar, but the last part of it with great abhorrence. I now perceived small ulcers on the inside of my cheeks, particularly near a bad tooth in the lower jaw of the right side; the gums of the upper jaw of the same side were swelled and red, and bled when pressed with the finger; the right nostril was also internally red or purple, and very painful; I had one thin stool.

"On the 12th, I ate 30 oz. of bread, with 10 of sugar; had little appetite for supper, and after it a thin stool.

"On the 13th, having been extremely ill during the night with pains in my bowels and sweating, at day-break I had a large thin stool, and two liquid stools afterwards, but passed no wind, nor was troubled with any in my bowels. I had no appetite for breakfast, could not taste sugar, dined on a few ounces of meat with about 12 oz. of bread, and drank 2 or 3 glasses of wine.

"On the 14th, I perceived some small purple streaks on my right shoulder.

"On the 15th, the affection of my gums, though less in degree, had become more general, having spread to the left side; their semilunar edges were of a deep red; and several drops of blood issued from my right nostril.

"N.B.—Until the 18th, I had every day three or four liquid stools, containing some clear gelatinous substance, and felt but little pain or wind in my bowels."

After having lived irregularly for a week, he tried the effect of taking olive oil, instead of sugar, with his bread; and from the 24th to the 30th of August, his diet was 30 oz. of bread, ½ oz. of olive oil, and 3 lbs. of water, a day. From the 30th of August to the 5th of September, the same quantity of bread and water, without the oil. He then again lived irregularly.

As might have been expected, the scorbutic symptoms and the debility constantly increased. On the 23d of August, he had a tooth, which had been for some time troublesome, extracted. "The day following," he writes in his journal, "I had great pain in the part from whence the tooth was taken, and the gums appeared somewhat black. The second night I had no sleep from the excessive pain; and an abominably putrid slough was formed. The gums in the neighbourhood of the sore swelled more than ever, and became in part livid, with a fetid white stuff round their edges; while the gums immediately over the sore were black and insensible."

"On the 8th of September, I was so weak and low, that I almost fainted in walking across my room; had four or five loose stools in the course of the day; was sick; and my tongue foul."

It would be useless to pursue this painful narrative, which goes on detailing other experiments of the same kind, continued until the month of February, when the Doctor, reduced to the most deplorable condition, fell a victim to his own experiments.

The case of Dr. Stark confirms what I have before stated—that scurvy may exist in a high degree without perceptible loss of flesh. It shews, also, that under the most favourable circumstances, and when the restriction is voluntary, a diet of bread and water is insufficient for the support of health. Another point established by the Doctor's experiments, is, what with our present knowledge we might have anticipated, that the sugar added in one of his experiments was no equivalent for the same weight of bread subtracted. With 38 oz. of bread, he gained 3 oz. 6 dr. a day in weight; with 34 oz. of bread and 4 oz. of sugar, he gained 2 oz. a day; with 30 oz. of bread and 8 oz. sugar, his weight was stationary. The sugar, composed entirely of carbon and water, was less nutritious than bread, which,



besides starch, which is equivalent to sugar, contains gluten, a substance rich in nitrogen.

We could scarcely expect that the effects of a bread and water diet would be less severe in prisoners, who are subject to confinement and other depressing influences. A painful sketch of them has been given by Mr. Malcolmson, in a letter he addressed, in 1837, to Sir H. Hardinge, on the effects of solitary confinement and bread and water diet on the health of prisoners in India. He says, "Many men, particularly those of indolent habits, endure a confinement of four or six weeks on bread and water without injury to their health; but in some instances a shorter period is sufficient to cause a total loss of appetite—the bread is hardly touched, and on other food being allowed, the patient is unable to eat or to digest it. The stomach becomes weak; there is uneasiness across the stomach, spleen, and liver; the latter is torpid; the bowels are confined, or they are relaxed with slimy discharges unaccompanied with pain; yet the swollen red tongue indicates the existence of irritation of the mucous membrane of the digestive canal. The pulse is quick and feeble; and the clammy skin, vertigo, debility, headache, and sleeplessness, shew how much the constitution suffers from diminished nervous power. The convalescence is slow, and the treatment requires to be adapted to the enfeebled state of the system. The effect is, however, more clearly seen in men sentenced to six or twelve months' solitary confinement. Two of these were in hospital at the same time, with decided symptoms of scurvy. One was admitted after five months' confinement, during part of which he had been allowed extra diet at my recommendation. It was observed that, for some time previous to his removal to the hospital, his daily allowance of bread was removed almost untouched. He complained of pains of the limbs, along the spine, and across the loins; tenderness of the shin bones; hardness, pain, and feeling of stiffness, of the calves of the legs; and the skin over the painful muscles was of a dark livid colour, from effused blood. The gums were spongy, livid, and retracted; and he suffered from sleeplessness, some pain of the region of the liver, and slight griping. The tongue was yellow, and its edges red. The other had been a shorter time in confinement, and complained of debility, disorder of the bowels, pains of the shin bones, &c. &c. A blister was applied, which caused a foul sore, from which dark-coloured blood flowed on the slightest touch."

Mr. Malcolmson found, by inquiries made two years subsequently, that one of those men had hardly been out of hospital during that time, and had not then com-

pleted his full period of confinement; and that the other was very frequently on the sick list, with a variety of complaints: that, in fact, the health of both was irretrievably ruined. There can be no doubt that these effects are chiefly to be ascribed to the diet; for Mr. Malcolmson observes, in a subsequent part of his letter, that he has not met with an exactly similar train of symptoms, induced by solitary confinement, in healthy soldiers, when their ordinary rations were allowed them.

It appears from these instances given by Mr. Malcolmson, and from the touching case of Dr. Stark, as well as from the experiments of Magendie, that when an animal has been kept long on a diet deficient in nitrogen and other necessary principles, his health is irretrievably ruined. The allowing him a sufficient diet afterwards does not restore him. In this respect these forms of disease differ from simple scurvy, as it occurs in sailors, from the highest degrees of which men rapidly recover under the use of antiscorbutics, and which, as far as we can judge, does no permanent harm to the constitution.

The urgent remonstrances of Mr. Malcolmson, with respect to the effects of solitary confinement and a diet of bread and water, were attended to; and he had soon the satisfaction of seeing the success of his efforts for the abolition of this mode of punishment in the Indian army.

But instances of the kind mentioned by Mr. Malcolmson are not, or at least were not a few years ago, confined to the prisons of India. In the reports of the Inspectors of Prisons for 1836, you will find many instances of the insufficiency of a bread and water diet to support life for any considerable time.

In the House of Correction at Little Walsingham, Norfolk, the diet of the prisoners consisted of bread and water only. The allowance of bread was 2 lbs. 6 oz. for those at hard labour; 2 lbs. for those not at hard labour. Prisoners sentenced for more than three months were allowed half a pound of meat once a week.

The surgeon in his report states, that there are very few prisoners who can be maintained in health longer than three months; and that he is obliged to make frequent changes of diet, by ordering porter and antiscorbutics, to repress scurvy, which occasionally makes its appearance, and, if not checked, would prevail to a considerable extent.

The cost of extra allowances made during the year, by order of the surgeon, was more than a thirteenth part of the cost of the prison diet for the year: a considerable proportion, when it is considered that extra

allowances would scarcely be granted to those whose term of imprisonment was short.

From the preceding accounts, one might have anticipated the effects of the cruel system of starvation practised in the gaol at Swaffham. Here also the diet was bread and water. The prisoners, when committed for seven days, were allowed 1 lb. of bread a day; when for more than seven days, and less than three months,  $1\frac{1}{2}$  lb. a day; when for more than three months, and less than six, 2 lbs.; and when for six months,  $2\frac{1}{2}$  lbs. of bread a day, and  $\frac{1}{2}$  lb. of butter a week. But on their recommittal for less than six months, only  $1\frac{1}{2}$  lb.; for six months, 2 lbs.; and for more than six months,  $2\frac{1}{2}$  lbs. of bread a day.

The surgeon states that low fevers, debility, and scorbutic complaints, prevail to a very considerable extent among the prisoners; that they frequently lose their teeth from the effects of scurvy, and, being unacquainted with its symptoms, they do not usually complain until the disease has made considerable progress. It is indeed quite evident that few prisoners could live three months on this system of diet if fully carried out. A sentence of three months' imprisonment, passed perhaps for some slight misdemeanour, would be sentence of the most lingering and cruel death. But the system was not, and indeed could not be, fully carried out. The symptoms of starvation became manifest, and the surgeon was obliged to break in upon the prison allowance, by frequently ordering porter and other nourishing food. It appears from the accounts, that the cost of extra articles ordered by the surgeon was nearly one-seventh of the cost of the entire maintenance of the prisoners.

It may indeed well excite surprise that such a system should have been attempted, nearly a century after the experiments of Dr. Stark had shewn conclusively that such a diet, continued under the most favourable circumstances, for a much shorter time than three months, is utterly ruinous of health. It is another striking instance of the general ignorance that prevailed until lately on this most important subject. This ignorance is amusingly shewn, if indeed a thing so fraught with suffering can be matter of amusement, in the following order made by the visiting magistrates of the Swaffham prison, in November 1835:—

“ Ordered by the visiting magistrates:— That, in consequence of the representation of the surgeon, all prisoners, convicted for a longer period than one month, to have an addition to their present diet of *one pint of gruel* each, with salt and onions therein. Also, that all prisoners, convicted for any

period exceeding three months, be allowed (three days in a week) one pound of potatoes instead of a half-a-pound of bread; such allowance to commence at the expiration of the period of three months.”

One cannot restrain a smile at the cautious way in which these worthy justices make the concession of allowing the prisoner, after he has been kept three months on a pound and a half of bread, and a pint of gruel, a day, to exchange, three days in a week, half a pound of bread for a pound of potatoes. He would find it a poor exchange; for bread contains much more than twice the quantity of carbon and nitrogen—and, in short, of all the elements of nutrition, except water—than an equal weight of bread. What a notion they must have had of their own gormandizing! One can scarcely help wishing that they should be compelled to purchase exemption from their next fit of gout by a month's restriction to the prison regimen.

It is stated by Müller that, in Denmark, a diet of bread and water for four weeks is considered equivalent to the punishment of death. The effects of such a diet must vary considerably with the quality of the wheat, which contains a much larger proportion of gluten, and is proportionally more nutritious, when grown in warm than in cold countries. The proportion of gluten in wheat grown in Italy is stated to be from 18 to 24 per cent.; while in fine Scotch flour, lately analysed by a committee at Glasgow, the quantity of gluten amounted to 6 per cent. only of the original flour. It has been ascertained by the Paris committee, whose labours I have already alluded to, that it is to its containing a larger share of gluten—a substance rich in nitrogen—that wheat owes its superiority over other corn as an article of food: that while the starch separated from flour gave little nourishment to dogs, the glutinous matter that remained was of itself sufficient to maintain them in health for a considerable time.

I am afraid you will deem me tedious in entering into all these details; but I do so from a conviction of their importance, and from a persuasion that, in the different positions you may occupy, in the navy and army, in our colonies, and as medical officers of workhouses, prisons, and asylums of our own country, you may alleviate or prevent much human suffering by the knowledge of what is really essential for man's support, and the various disorders that result from defective nourishment.

I am far from wishing to encourage any morbid sympathy with criminals, or from desiring that the food and comforts of men who have violated the laws of their country should exceed those of honest labour. But

it is surely right that the effects of their diet should be clearly established, — that the nation may form an estimate of the degree and nature of the punishment which its laws award to crime.

Another point that I wish to impress on you with respect to the diet of prisoners is, that the quantity of food necessary for the maintenance of health varies with the degree of labour. Prisoners condemned to hard labour require much more food than those of whom no labour is exacted. No fact in physiology is more certain than that muscular exertion causes waste of the body: it increases the elimination of carbon by the lungs, and, it is said, of nitrogen in the urine. But the fact did not require the sagacity of physiologists and chemists to discover. It has been established by the experience of all ages, and is become a fixed article of popular belief. In the regimen of prisoners it is almost invariably attended to; but in looking through the Reports of the Inspectors of Prisons, I find a few instances in which it has been shamefully disregarded. In the Worcester county jail, for instance, until lately, prisoners on summary convictions for one month, and vagrants for the first month, received only one pound of bread and one quart of gruel daily, notwithstanding their being at hard labour.

You will also bear in mind that a greater quantity of food is required after the system has been reduced by sickness. The convalescents from sickness should therefore be allowed more than the ordinary prison allowance, when, as is usually the case, this is on the lowest scale by which a system of health can be maintained. It is of no use to attempt to violate this law. Any infringement of it, as of other natural laws, must be followed by a penalty; which here, however, will fall unjustly, in the form of returning sickness, on the prisoner.

I have already remarked, that the disorders produced by insufficient nourishment are most manifest, when the body has been reduced by losses of blood or wasting illness, and during the period of growth.

During growth, when not the daily losses only have to be repaired, but the framework of the body has to be built up, the demands of the system are great, and the appetite is proportionally keen. Children eat because they are hungry, and rarely suffer from excessive nutrition.

During manhood, when the body has attained its full growth, the daily expenditure only has to be made up, the appetite is less keen, and its returns less frequent: it is then provoked by stimulating and high-seasoned dishes; more food is habitually taken than the system requires, and, after a time, gout, bilious disorders, and other ef-

fects of over-feeding, make their appearance.

In old age, from the weakness of the assimilating functions, these become again less frequent. Gout rarely appears before twenty; and seldom for the first time after sixty. From twenty-five to fifty is the period of life most exposed to those disorders. Women are in great degree exempt from them, chiefly perhaps from the periodical discharges to which they are subject during this stage of their existence.

A disease of imperfect nutrition, frequently seen in children, is rickets, which is characterized chiefly by pliability of the bones, which yield to the weight of the body, and become crooked and much distorted. This softness and pliancy of the bones is owing to their containing an insufficient quantity of phosphate of lime.

This condition of the bones, like scrofula and other diseases of imperfect nutrition, may result from weakness of constitution, and consequent imperfect assimilation of the food. But it may assuredly arise also from deficiency of food, or rather from a diet deficient in lime and other elements of which the bones are made up.

If a child be kept too exclusively on what Dr. Prout calls the saccharine principles—substances composed of carbon and water; or on these and oleaginous principles, as butter and fat, he may be loaded with fat, but his muscles and bones will be imperfectly developed. The muscles will be small, the child unable to stand, and the bones rickety and bent from the weight of the body. A diet composed of carbon and water cannot supply nitrogen, phosphorus, lime.

The proper remedy in such cases is change of diet. The child should take less sugar and butter, and have animal food instead. A wine-glassful of lime-water, two or three times a day in milk, is said to be of considerable efficacy. Indeed, here, as in scurvy, and the other instances already mentioned, there seems to be an instinctive craving for substances required by the system. Liebig states that children whose food does not contain lime enough to form their bones, eat the lime of the walls with as much relish as their meals. It is the same unerring instinct that leads hens, while laying, to eat with greediness, and even fight for, an empty egg-shell. The lime it contains is needed for a new egg. It was a short time ago stated in a letter in "The Times," that hens will lay many more eggs if freely supplied with pounded egg-shells,—a truth long acted upon by thrifty market-women. When their food does not contain a sufficient quantity of lime, hens either cease to lay, or lay soft eggs.

The circumstances unfavourable to the development of bones in children, also retard, of course, the union of fractures. Fractures are slow in uniting in rickety children. An insufficient diet may long retard, or prevent altogether, the union of fractures in a grown-up person. Of this the following instances are given by Sir B. Brodie :—

“ A gentleman was growing fat, and not liking to do so, he put himself upon a very spare diet, though accustomed to good living previously. After six months of starvation, he broke his arm, and the bones would not unite. I saw him many months afterwards, and there was scarcely any union even by soft substance. Another patient about whom I was consulted, a lady, was growing fat, though she would also prevent it by pursuing a similar system of diet. Some months afterwards she broke her arm, and union did not take place.”

A more striking instance of the effect of insufficient nourishment in preventing the union of fractures, occurred during Napoleon's expedition to Egypt. It is stated by Baron Larrey, who was chief surgeon of the army, and whose account of the prevalence of scurvy in Alexandria during the summer of 1801 I have already cited, that almost all the fractures of the extremities, especially of the humerus from gun-shot wounds, received by the French soldiers in Syria, were followed by false joints. He ascribes this to the continual movement of the wounded soldiers; to the influence of the malarious atmosphere of Syria; and to the insufficiency and bad quality of their food. All these causes, he says, may have prevented the formation of callus, by displacing the bones, or by diminishing the quantity of phosphate of lime.

During pregnancy the condition of the system so far resembles that of childhood that more nourishment is required than would suffice to supply the daily waste. A new body has to receive its increase from the materials eaten by the parent. The formative process in the foetus is more active; its demands for the materials of growth are more urgent, and are first supplied. As might have been expected, numerous cases are on record in which bones fractured during pregnancy have shown no tendency to unite before the birth of the child. It is probable that in every case the union of fractures is more slow, and that scurvy, ulceration of the cornea, and other effects of insufficient nutriment, show themselves earlier during pregnancy and lactation than at other times.

Many cases are also recorded showing the slowness with which reparation of fractures takes place in persons much wasted by fever,

or other illness. All those instances are illustrations of what may be laid down as a law,—that the effects of insufficient nourishment will be earliest seen when the demands of the system are greatest—when a new body has to be built up, or the losses of a grown one repaired.

The teeth resemble bones in chemical composition, containing a large proportion of phosphate and carbonate of lime. The enamel differs from the osseous substance chiefly in containing no animal matter, or a very small quantity of it, and a larger proportion of the salts of lime. We might expect, therefore, that the causes which retard the growth of bone would, if they act during that period of life when the permanent teeth are formed, retard the development of the teeth. Such is found to be the case. Persons of scrofulous constitution, more especially women who during childhood were delicate, or were much reduced by eruptive fevers or other wasting illness, have often small teeth with an irregular pitted surface, from the partial absence of enamel, which was formed in too small quantity completely to cover the teeth. Teeth of this kind early decay, from the corroding action of the food and secretions of the mouth which lodge in the depressions caused by the absence of enamel.

We not unfrequently see two or four corresponding teeth, which were formed at the same time, deficient in enamel, and carious, while others are not. If one tooth decays, it generally happens that its fellow soon after suffers similar decay, commencing at the corresponding point, and following the same march. Accidental circumstances may hasten the decay, and explain the circumstance that one goes before the other, but they do not cause it: the real cause of the decay is defective enamel at the part. In many cases this may no doubt be traced to some exhausting illness at that period of life when the teeth in question were forming.

This condition of the teeth, like scrofula and rickets, is no doubt most frequently caused by imperfect assimilation, and is the consequence, not of deficiency of food, but of weakness of the assimilating functions. But, like those other diseases, it may unquestionably be brought on by deficiency of food, or rather by a diet deficient in the elements which enter into the composition of teeth.

Teeth differ from bones in this, that a great part of their mass is destitute of vessels, and undergoes no nutritive interchange. This is an advantage so far as when once formed they are in a great measure independent of the health. Bones may become soft in after life; but teeth remain the same in composition as they were formed in child-



hood. But this advantage is purchased by the evil, that they retain through life the defects of their first development. The soft bones of ricketty children become firm by the subsequent deposit of lime; but teeth at first deficient in enamel always remain so.

On seeing the negroes brought into the Dreadnought, I have often been struck with admiration of their large beautiful teeth, which rarely present the slightest trace of decay. In this, and in their heavy, massy skulls, they strongly remind us of the carnivorous animals. The question at once occurs, are these peculiarities at all owing to their diet or mode of life in childhood?

We might suppose that the great excellence of their teeth was a peculiarity of race, and independent of any particular habits of life; but this supposition is, I think, rendered improbable, by the circumstance that the teeth of the aborigines of New Holland, a very different race, are equally perfect. In 1839, my friend Dr. Stanger gave me one of five skulls, which he abstracted himself, with much difficulty and danger, from a burying-ground of the original inhabitants of New Holland. Two of these skulls were evidently the skulls of persons advanced in life. One of the skulls, that of a woman, had one decayed tooth. In two others, one upper front tooth was wanting (most probably knocked out by a blow), and the corresponding alveoli were obliterated. With these exceptions, the teeth in all the skulls were in the most perfect state.

Hair and nails frequently suffer from defective nutrition. The hair falls off after fever; the nails become dry and crisp in diabetes, and curved in phthisis. The effects of imperfect nutrition in nails are not permanent, unless there is defect in the matrix, because the nails are continually renewed. As indicating the state of nutrition at the time, the nails are perhaps not sufficiently regarded, especially in children.

Gentlemen,—I have now given you a very imperfect sketch of the known disorders produced by defective nutriment. You have seen, that since the body of man is made up of various elements,—of carbon, nitrogen, sulphur, lime, phosphorus, &c. which cannot be formed one of another, and which are each essential to the formation of some organ or tissue, that his diet must be varied in kind: that if we attempt to keep him on a diet deficient in these necessary elements, various disorders arise, differing in their aspect, and in the structure affected, according to the particular element wanting. Numerous facts, both in nurture of animals and in agriculture, point out the importance of various incidental principles, small in absolute amount, but apparently not the less essential to the due development of the structures into which they enter as constituents. With all these principles we are

perhaps not yet acquainted. You will see, therefore, the prudence of recommending a varied diet; and you might expect, what indeed really happens, that if men, and more especially children, be kept long on the uniform and regulated diet of our prisons, workhouses, and asylums, some disorder, the result of defective nutriment, is almost sure to arise. These disorders are, as I have said, various in their aspect; and with the characters of many of them we are, no doubt, imperfectly acquainted. I cannot therefore delineate them all; but they have this character in common, which in doubtful cases may assist your judgment—that they occur chiefly, and prevail most, in persons longest confined, and in those reduced by losses of blood or exhausting illness. Whenever, in a jail or asylum, or during a voyage or a siege, you see a strange disorder having this character, suspect that it has its origin in imperfect nourishment. The character is the more valuable, as the contrary generally happens with malarious diseases and fevers—which attack strangers more than those long resident in the unhealthy locality.

Another circumstance that cannot fail to have arrested your attention, is the instinctive craving for substances required by the system. The longing desire which a scorbutic sailor has for greens and vegetables, which a man convalescent from fever or a child kept too exclusively on sugar and starch, has for meat, is the result of laws framed by a higher wisdom than ours. We should take care, short-sighted as we are, that we are not too officious in the management of children, and in the treatment of disease; and that we do not, without good reason, oppose the gratification of these instinctive cravings.

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## ON THE STRUCTURE AND USE OF THE MALPIGHIAN BODIES OF THE KIDNEY,

WITH OBSERVATIONS ON THE CIRCULATION  
THROUGH THAT GLAND.

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[We are enabled to present the following abstract of Mr. Bowman's recent paper on the Kidney\*, which has been revised by the author]:—

All anatomists of the present day have hitherto agreed in denying that the Malpighian bodies have any con-

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\* Philosophical Transactions, Part 1, 1842.



nection with the tortuous uriniferous tubes among which they lie. The old idea of Malpighi\*, that they are glands, situated at the extremities of the tubes, and the description and figure of Schumlansky†, confirming this view with new proofs, have been alike rejected by Huschke‡, Müller§, Berres||, and other living writers, who have devoted attention to this subject. It is a common opinion that the tubes have free blind extremities distinct from the Malpighian bodies. Some imagine them to end in loops; and others, that they anastomose with one another in a plexiform manner. As for the Malpighian bodies, they are usually considered to have no other use than that of delaying the blood in its passage to the capillaries surrounding the uriniferous tubes. The object of this paper is to shew the incorrectness of all these notions, by proving the tubes to end in a peculiar manner in the Malpighian bodies, and to found, on this view of the structure of the kidney, some new considerations respecting the mode in which its secreting function is performed.

A few words may be premised with regard to the general arrangement of the parts in the interior of the gland. The division into *cortical* and *medullary* portions is familiar to all; the former being the seat of the secreting function, and composed chiefly of convoluted tubes and vessels; the latter being merely the commencement of the excretory apparatus, in which the tubes converge towards their orifices on the tips of the medullary cones.

Tracing one of these tubes from its orifice into the interior of the gland, we find it bifurcating again and again, until a set or bundle results. The tubes of this bundle continue to multiply in a similar manner as they advance through the cortical portion towards the surface of the organ; but, on entering the cortical portion, the outer ones curl backwards one after the other, and become convoluted, until, at length, the central ones also, on reaching the surface, finally bend down

on all sides, and cover in the surface of the organ with their gyrations. Thus each set of tubes passing through the cortical portion of the organ, becomes surrounded with a mass of convolutions formed by the tubes belonging to it. The Malpighian bodies are imbedded, at pretty equal distances, among these convoluted tubes, one being situated at the extremity of each.

If we consider the system of tubes that has now been described as though isolated from the rest of the organ, it will be perceived to be of a pyramidal shape; the apex at the orifice, the base at the surface of the gland. It is, in fact, a pyramid of Ferrein; and the whole organ is an assemblage of them, forming an united mass.

The *renal artery* sends several anastomosing branches to the coats of the larger vessels, and other structures in the hilus, and to the capsule; but its proper *glandular* branches are all spent on the Malpighian bodies. These enter between the bases of the medullary cones, and then subdivide and spread between the medullary and cortical portions, in order to send off straight branches (*a, a*, in the accompanying figures) through the cortex in the intervals of the pyramids of Ferrein. These latter, after one or two divisions, send off, on all sides, numerous fine *terminal twigs*, each one of which goes to a Malpighian body, and may be termed its *afferent vessel* (*af*). No *glandular* twigs of the artery reach the surface of the organ; but occasionally one or two branches perforate the gland to arrive at its capsular covering.

The *afferent vessel* of each Malpighian body breaks up into a *little system of capillaries enclosed within the dilated extremity of one of the convoluted tubes* (refer to the plan in fig. 6). This system is the *Malpighian tuft* (*m*); and the dilatation of the tube is the *Malpighian capsule* (*c*), both of which will be further described.

The blood leaves each Malpighian tuft by a solitary *efferent vessel* (*ef*), which passes out at the same point at which the afferent vessel entered. It is then conveyed directly into a very close *plexus of capillaries surrounding the uriniferous tubes* (*p*), which derives its blood from no other source. This plexus empties itself into branches of the *renal or emulgent vein* (*ev*), which run with the arteries between the pyramids of Ferrein down to the bases

\* De Renibus, cap. iii.

† Diss. Inaug. Anat. de Renum Structura, Argent. 1781.

‡ Ueber die Textur der Nieren, Isis, 1828, p. 561.

§ De Gland. Secern. Struct. Penit. Lips. 1830, Lib. x.—“Falsissima est opinio de connexu ullo quopiam inter corpora Malpighiana sanguifera, et ductuum uriniferorum fines,” p. 95.

|| Anatomie der mikrosk. Gebilde des menschl. Körpers.

FIG. 1.

FIG. 2.

Malpighian tuft, injected from the artery (*horse*).  
*af*, afferent vessel dilating (*d*) before its division;  
*ef*, efferent vessel formed in the interior, and  
 emerging between the branches of the afferent  
 vessel: *m*, tuft.—Magnified 80 diam.

of the medullary cones; after which, they emerge from the organ. Ere they emerge, however, they receive from the capillary plexus of the cones the blood which has been poured into it from the efferent vessels of those Malpighian bodies that lie near the bases of the cones. The stelliform vessels seen on the surface of the kidney are the commencement of some of these veins.

These several parts are held in their place by a dense intertubular substance termed the *matrix*. This is most abundant in the medullary cones, which are consequently firmer than the cortex: in them it may be seen by a thin transverse section of the tubes. It appears to be a homogeneous substance, in which the tubes and vessels are imbedded, and, by its firmness, prevented from collapsing. In the cortical portion it is far less abundant, and in some animals is scarcely visible. It may perhaps be the representative of an areolar tissue, though it bears no anatomical resemblance to it. The areolar tissue can only be traced a little way into the gland on the coats of the larger vessels.

Such is a rough outline of the structure of the gland: we now come to some interesting details.

The walls of the uriniferous tubes consist of two structures (see Fig. 2),—(1) An outer homogeneous transparent membrane, of extreme tenuity, termed the *basement membrane* (*bm*), which serves as a foundation for (2) the *epithelium* (*ep*), a pavement of nucleated particles, discovered by Henle, and now well known to anatomists: this forms more than nine-tenths of the whole thickness of the wall.

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From the *frog*. Shews the continuity of the Malpighian capsule with the tube, the change in the character of the epithelium, and the Malpighian tuft. *bm*, basement membrane of the tube; *ep*, epithelium of the tube; *cas*, cavity of the tube; *bm'*, basement membrane of the capsule; *ep'*, epithelium of the neck of the tube and neighbouring part of the capsule; *ep''*, detached particle of ciliated epithelium, more highly magnified; *cas'*, cavity of the capsule, in which the Malpighian tuft *m* lies bare, having entered near *f*, where the view is obscured by another tube.—Magnified 320 diam.

Each tube terminates by its basement membrane becoming expanded over the Malpighian tuft to constitute the Malpighian capsule (*bm*, *bm'*, Fig. 2.) This capsule, at its further extremity, or that opposite its junction with the tube, is perforated by the afferent and efferent vessels of the tuft, which are united to it as they pass; but the tuft itself lies free and loose within its little cell, not covered by any reflexion of the capsule, but every twisted capillary composing it being quite bare; so much so that the structure of the small vessels can be very easily examined in

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this situation with a high magnifying power.

The epithelium of the tube has a finely granular opaque aspect (Fig. 2, *ep*); but at the neck of the Malpighian capsule it alters its character, and becomes much more transparent (*ep'*), and in some animals (probably in all) clothed with *vibratile cilia* (*cav'*) constantly impelling a current down the tube. The epithelium is continued, in many cases, over the whole interior surface of the capsule, but in other instances cannot be detected over more than a third of its extent. When quite within the capsule it is no longer ciliated, and always of excessive delicacy and translucence. In a thin slice of the recent kidney of the frog the cilia may be seen in active motion.

Mr. Bowman makes the following observations on the renal circulation:—

“There are *two perfectly distinct systems of capillary vessels in the kidneys* through which the blood passes in succession in its course from the arteries into the veins: the 1st, that inserted into the dilated extremities of the uriniferous tubes, and in immediate connection with the arteries; the 2d, that enveloping the convolutions of the tubes, and communicating directly with the veins. The efferent vessels of the Malpighian bodies that carry the blood between these two systems, may collectively be termed the *portal system of the kidney*. To these distinct capillary systems I am inclined to attribute distinct parts of the function of the organ, and their importance seems to warrant a few words in further explanation of their anatomical differences.

“The former, or the Malpighian capillary system, is made up of as many isolated parts as there are Malpighian bodies; and as there is no inosculation between the arterial branches supplying them, the blood enters each in a direct stream from the main trunk. This capillary system is also remarkable in being *bare*. The secreting tubes of the kidney, like those of all other glands, are, strictly speaking, an involution of the outer tegument; their interior is, in one sense, the outside of the body. But here is a tuft of capillaries extruded through the wall of the tube, and lodged in a dilatation of its cavity, uncovered by any structure. Bare indeed, yet screened from injury in its remote cells with infinite care and skill! Each separate part, too, of this system has

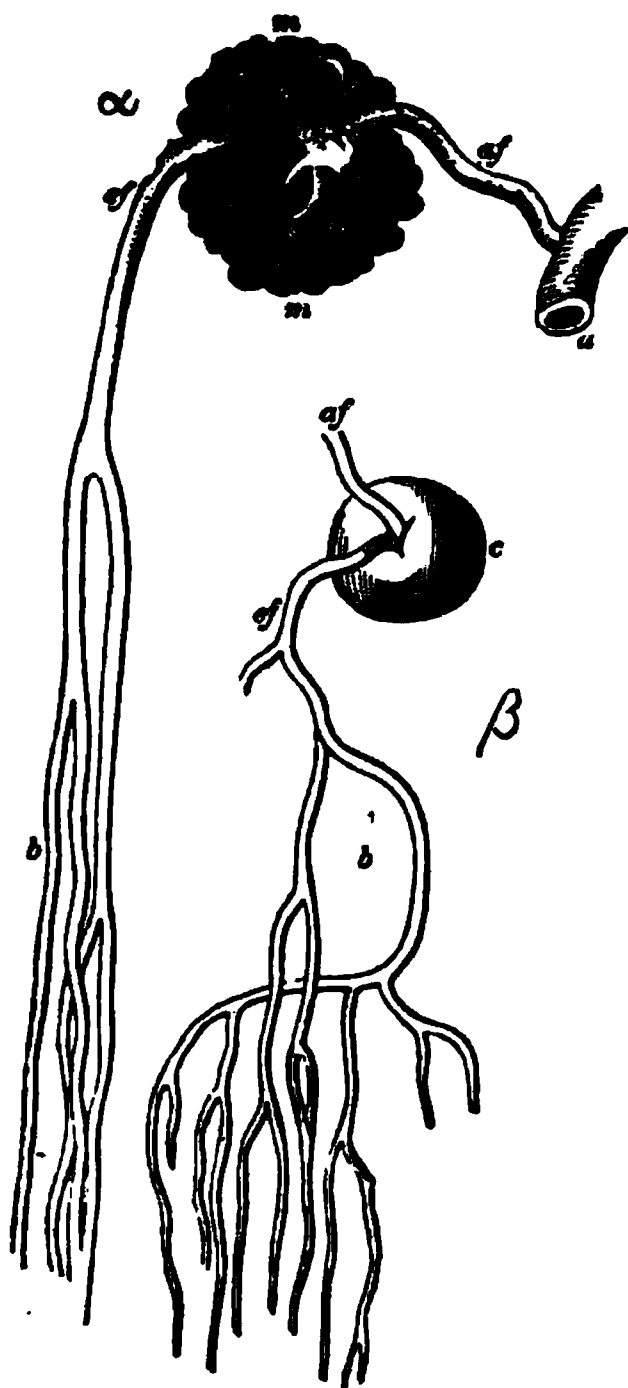
but one afferent and one efferent channel; and both of these are exceedingly small compared with the united capacity of the capillary tuft. Hence must arise a greater retardation of blood in the tuft than occurs probably in any other part of the vascular system.

“The other system of capillaries, or that surrounding the tubes, corresponds in every important respect with that investing the secreting canals of other glands. The vessels anastomose with the utmost freedom on every side, and lie on the deep surface of the membrane furnishing the secretion.”

The author applies the term “portal system of the kidney” to the series of vessels connecting these two, on account of the close analogy it seems to bear to the vena porta. “The precise quality of the blood it carries may be doubtful, but in position it is similar. It intervenes between two capillary networks, the first of which answers to that in which the vena porta originates, and the second to that in which the vena porta terminates. The obvious difference lies in its several parts not uniting into a single trunk to subdivide afterwards: but this circumstance seems to admit of easy explanation. A trunk is formed in the great portal circulation for the convenience of transport; most of the capillaries which supply it lying at a distance from the liver. Some, however, viz., those drawn from the hepatic artery, either enter the portal-hepatic plexus of the lobules directly, or else join the minuter twigs of the portal vein. Now, in the kidney, the vessels issuing from the Malpighian tufts are disseminated pretty equally throughout the plexus surrounding the tubes, and they therefore enter it at all points at once, without uniting. In the medullary cones, however, where there is a corresponding plexus to be supplied with blood, but no Malpighian bodies nearer than the base of the cones, the conditions which oblige the formation of a portal venous trunk begin to operate; the two capillary systems it serves to connect are at some distance apart. Here, accordingly, the Malpighian bodies are generally larger, their efferent vessels more capacious, and branched after the manner of an artery. *Each one of these efferent vessels is truly a portal vein in miniature.*”

In those animals which have a *true portal vein*, derived from distant parts,

FIG. 3.



Malpighian tufts from near the base of the medullary cones, showing the efferent vessels branching like arteries as they enter the cones. *a*, from the horse; *β*, from the rabbit. *a*, artery; *af*, afferent vessel; *m*, Malpighian tuft; *c*, Malpighian capsule filled with extravasated injection; *ef*, efferent vessel; *b*, its branches.—Magnified 70 diam.

distributed through the kidney, we might expect it to be joined by the efferent vessels of the Malpighian bodies; if, in fact, they are to be considered *portal*. This is shown to be the case in the *boa*, which may be taken as a model of this arrangement.

"The kidney of the *boa*, being composed of a series of flat lobes, displays all the points of its structure in peculiar simplicity and beauty. In each, the artery subdivides into extremely minute twigs, which diverge on either hand, and enter the Malpighian bodies. The *efferent vessels* are of the same size as the afferent, and, on emerging, take a direct course to the surface of the lobe, and join the branches of the *portal vein* there spread out. The branches of the portal vein on the surface send inwards very numerous twigs

to form the *capillary plexus surrounding the uriniferous tubes*. This extends from the surface to the centre of the lobe, and there ends in the branches of the *emulgent vein*.

"Thus the efferent vessels of the Malpighian bodies are radicles of the portal vein, and through it empty themselves (as in the higher tribes) into the plexus surrounding the tubes.

"The circulation through this form of kidney may be aptly compared with that through the liver, as described by Mr. Kiernan in his invaluable paper on that gland. The plexus surrounding the tubes corresponds with the portal-hepatic plexus which invests the terminal portions of the bile-ducts in the lobules of the liver. Both of these plexuses are supplied with blood by a portal vein, derived chiefly from the capillaries of distant organs, but in part, also, from those of the artery of the respective organs themselves. The only difference seems to be, that, while in the liver the branches of the artery are entirely given to the coats of the larger blood-vessels, ducts, &c.; in the kidney, a few only are so distributed, the greater number going through the Malpighian bodies to perform an important and peculiar function.

"The comparison between the hepatic and renal portal circulation may be thus drawn in more general terms. The portal system of the liver has a double source, one extraneous, the other in the organ itself: so, the portal system of the kidney, in the lower tribes, has a two-fold origin, one extraneous, the other in the organ itself. In both cases the extraneous source is the principal one, and the artery furnishing the internal source is very small. But, in the kidney of the higher tribes, the portal system has only an internal source, and the artery supplying it is proportionally large." The following plans are given in illustration of the circulation in the two varieties of kidney.

The author then details the results of his injections by the *artery*, *vein*, and *ureter*; and shews their accordance with the preceding description. We can only abstract a few principal facts.

"By the *arteries* the Malpighian tufts can be injected with great facility, and through the tufts, the capillaries surrounding the tubes." The convoluted

FIG. 4.

FIG. 6.

FIG. 5.

Ideal plans of the structure of the kidney in man (4), and in the *bos* (5). The proportions in each are the natural ones. *a*, artery; *af*, afferent vessel; *m*, Malpighian tuft; *c*, Malpighian capsule; *t*, tube; *u*, branch of ureter; *ef*, efferent vessel; *e*, efferent vessels from other Malpighian bodies; *pv*, portal vein; *b*, its branches; *p*, plexus surrounding the tubes; *ev*, emulgent vein. The letters *af*, *ese*, in Fig. 4; and *ef*, *pv*, *bb*, in Fig. 5, indicate the *portal system*.—Supposed to be magnified 40 diam.

tubes can be injected from the arteries, but this happens only when extravasation occurs from the Malpighian tufts, when, of course, the injection escapes into the cavity of the capsule, and then readily passes down the tube. This is shown in very numerous preparations of the kidney of man, and other mammalia, of birds, reptiles, and fish, and is represented in several of the figures, one of the most characteristic of which we subjoin\*.

\* As a curious illustration of this, Mr. Bowman has discovered that blood escapes into the tubes in a similar manner, from the Malpighian tufts, in Bright's disease. The red dots in the kidney, in this disease, are frequently a little mass of the convolutions of a tube thus filled with coagulums, though they have been mistaken for enlarged Malpighian bodies. He also supposes that the more or less perfect plug thus formed in the tubes is the occasion of those dilatations of the tubes and Malpighian capsules, as well as of the obliteration and atrophy of the tubes, which are



From the *human subject*. *a*, arterial branch, ending entirely in Malpighian bodies, which are injected in different degrees. At *a* the injection has only partially filled the tuft, at *b* it has entirely filled it, and has then passed on through the efferent vessel (*ef*) without any extravasation; at *c* it has burst into the capsule, and escaped along the tube *t*, but has also filled the efferent vessel *ef*; at *d* and *e* it has been extravasated, and has passed along the tube *tt*; at *m* the injection, on escaping into the capsule, has not spread over the whole surface of the tuft.—Magnified 45 diam.

"By the *veins* the capillaries surrounding the tubes can be injected, but neither the Malpighian tufts, nor the arteries, nor (without extravasation) the tubes." It is explained, by considerations derived from the arrangement of the vessels previously described, how it happens that the Malpighian tufts cannot be filled from the veins.

"By the *tubes* the Malpighian bodies cannot be injected, nor (without extravasation) the plexus surrounding the tubes, nor the veins." It has been usually thought conclusive against the termination of the tubes in the Malpighian bodies, that these latter cannot be injected through the ureter. But the author shews, from the structure

to be met with in the more advanced stages of the disease. He has never seen a clearly dilated condition of the vessels of the Malpighian tufts, but considers that these bodies are unquestionably concerned in the train of morbid phenomena.



and course of the tubes themselves, that this must be next to impossible. They have blind extremities, are very long and tortuous, and their walls are so thin as to offer a very feeble resistance to pressure.

A table is then given of measurements of Malpighian bodies and tubes. They are shown to vary greatly, not only in different animals, but in the same organ; and the latter circumstance receives illustration from the kidney of the boa, where they are large in proportion to the length of the tubes coming from them.

We find it difficult to condense the arguments for the theory advanced by the author, in such a manner as not to deprive them of some of their weight. The theory itself is shortly this:—

1. That the epithelium lining the tubes is the proper organ that secretes the characteristic products of the urine from the blood; and that it does this by first assimilating them into its own substance, and afterwards giving them up on its free surface.

This view accords with Purkinje's theory of secretion, which is now rapidly gaining ground among physiologists\*.

2. That these proper urinous products require for their solution a large quantity of water.

3. That this water is furnished by the Malpighian tufts of capillaries, placed at the extremities of the uriferous tubes.

That this is the use of the Malpighian bodies is rendered highly probable by their singular position, and by all the details of their structure.

4. A further use of the Malpighian bodies seems to be that of sharing in regulating the amount of water in the body.

Mr. Bowman concludes with three remarks, founded on the facts and speculations advanced by him.

"1. The *bile* and *urine* have been ever classed together, as the most important excretions. The former is secreted from venous blood; the latter, it has been thought, from arterial blood, except in some inferior animals, in which the blood from the hinder part of the body circulates through the kidneys. But it is a most striking fact, that the proximate principles of the urine, like those of the bile, are secreted in *all animals* from blood that has already passed

through one system of capillaries; in a word, from *portal blood*: although it does not appear to what extent its qualities are changed by traversing the Malpighian system. The analogy is at least remarkable, and may throw some light on the mysterious meaning of the portal circulation.

"2. *Diuretic medicines* appear to act specially on the Malpighian bodies, and *various foreign substances*, particularly *salts*, which, when introduced into the blood, pass off by the urine with great freedom—exude, in all probability, through this bare system of capillaries. The structure of the Malpighian bodies indicates this, and also, as far as they are known, the laws regulating the transmission of fluids through organized tissues, modified in their affinities by vitality.

"3. The escape, also, of certain morbid products, occasionally found in the urine, seems to be from the Malpighian tufts. I allude especially to *sugar*, *albumen*, and the *red particles of the blood*; the two first of which would transude, while the last could escape only by rupture of the vessels."

## ORGANIC TISSUES,

THEIR MODE OF FORMATION, PROPERTIES,  
AND ANALOGIES.

BY JOHN COVENTRY, Surgeon.

[Concluded from p. 760.]

THE following is an epitome of the various types of development, principally after M. Schwann, wherein I have endeavoured to arrange each organic structure under its proper head:—

Type 1. Isolated *cells* (Schwann),  
cytoblasts (Valentin), floating in fluid.

### EXAMPLES.

<i>Animals.</i>	<i>Plants.</i>
<i>a. Physiological.</i>	<i>a. Physiological.</i>
Blood corpuscle, lymph, mucus, and milk globule.	Corpuscles (cyto- blasts) of cellular and woody tissues.
Germinal vesicle.	Embryo-sac.
<i>b. Pathological.</i>	
Cytoblast of hydatid, mole, tubercle, pus globule.	Various forms of entophytes.
<i>c. Individual organisms.</i>	<i>c. Individual organisms.</i>
Polyp, infusory, zo- osperm.	Lower algæ and fungi. Fovilla of Pollen.

\* See Cyclop. of Anat. art. Mucous Membrane, p. 500 et seq.

Type 2. "Cells forming coherent structures, the cell walls remaining distinct."—SCHWANN.

"Nuclei acquiring permanent cells, but both undergoing metamorphoses according to the nature of the tissues."—VALENTIN.

#### EXAMPLES.

<i>Animals.</i>	<i>Plants.</i>
Epithelial cells.	
{ Tessellate, }	Cellular membrane and the various forms of membranous cellular tissue.
{ Ciliate, }	
{ Cylindrate. }	
Epidermis of vertebrata generally, including nails, hoofs, feathers, scales, &c.	
Pigment membranes.	

Type 3. Cells whose walls have coalesced.

#### EXAMPLES.

<i>Animal.</i>	<i>Plant.</i>
Cartilage, bone, ivory of teeth.	* * *

Type 4. Cells splitting into fibres, the latter being formed from previous cells, by the inward growth of linear septa, as occurs in process of cellular formation of characeæ, and, according to Meyen, in some of the higher plants.

#### EXAMPLES.

<i>Animal.</i>	<i>Plant.</i>
Cellular and horny tissue.	Woody or fibrous tissue.

Type 5. Cells coalescent both by their walls and cavities; comprising two modifications.

1. Cells elongating into continuous cylindrical tubes, owing to obliteration of their septa, frequently acquiring secondary deposits to their interior.

#### EXAMPLES.

<i>Animals.</i>	<i>Plants.</i>
Muscular fibre, nervous fibre.	Vasiform tissue, common ducts, spiral vessels.

2. Cells irregularly disposed, assuming a stellate form, and coalescing by means of their radiate processes.

#### EXAMPLES.

<i>Animals.</i>	<i>Plants.</i>
Capillary vessels.	Proper ducts (cinechyma) or vegetable capillaries.

The vital properties to which these economies give rise now demand consideration.

The most striking distinction, perhaps, between animals and plants, is the entire absence, in the latter, of the

system of external relation,—of a proper fibrous system: hence, of the resulting sub-systems, including a brain and cerebro-spinal axis, perceptive and locomotive endowments. Their entire want of volition and animal sensibility\* proves that plants possess no central nervous organ analogous to the brain of animals; the complex and determinate movements very generally observable in the higher vegetable classes, by certain eminent botanists, deemed indicative even of a *psychological* or *mental* principle, being evidently of an excited (irrito-contractile) nature. The application to vegetable physiology of Dr. Marshall Hall's beautiful theory, levels with the dust these fanciful hypotheses, and restores the vegetable world to its legitimate place in the universal scheme. And although it has been remarked, more poetically, perhaps, than truly, that to view plants as endowed with a conscious nervous system—partaking with ourselves the *dulcia* if not the *decorum vite*, enjoying the blessings of sunshine and shade, the return of the seasons, activity and repose, and the thousand delicious sensations of life—would immeasurably enhance the argument for the beneficence of the Deity†, I cannot conceive either the plant or the argument benefited by such an arrangement.

With the faintest perception, for example, on the part of a plant, of the pleasures and advantages of locomotion, how insupportable were the conviction of its own helpless immobility! Like the aspiring elephant in the fable, one day's enjoyment of humanity were all-sufficient to convince them of their fatal mistake.

But to return:—The only vegetable functions apparently requiring nervous agency are those of nutrition, and those to which irrito-contractile structure is the essential condition; as the sleep of plants, the action of the leaves of mimosa, of the spongelets of roots, of the pistil and anther in various plants, &c.

But we have already seen that each component cell of the vegetable eco-

\* I use this term contrastively to organic sensibility, which is "not sensibility of any kind, but a capability possessed by certain nerves (the incident) of receiving and transmitting the impressions of physical agents to the true spinal cord; which again, by its peculiar power, excites muscular contraction through the medium of the reflex nerves." (Grainger.)

† Dr. Willis, in *Cyclopædia of Anatomy*.

mony possesses the property of assimilating foreign matter to its own proper structure, and the general nourishment of the plant; and this in virtue of the chemico-vital process, *metabolism*. In this event, a sympathetic nervous system were no longer a *sine qua non* to vegetable organization. We cannot, however, conceive of *excited action* in the *abstract*, or apart from some material source. And until refuted by actual experiment, many circumstances favour Dutrochet's idea, that the corpuscles dispersed throughout the pith constitute the diffused elements of the vegetable nervous system. The peculiar locality and definite structure of these globules, each being a perfect cytoblast, proclaim them no adventitious productions. Again, they are closely analogous to the persistent nervous system of some of the cycloneurose animals, more especially the porifera, as also to the early developmental phases of the superior classes. I am inclined to believe, therefore, that plants possess an irrito-contractile nervous system, resembling, in *modus operandi*, the true spinal system of animals; that is to say, giving rise to complex and determinate, but perfectly involuntary movements, the mere stimulus of a physical agent on a contractile surface being adequate to their production.

Plants, like animals, possess four grand divisions of the system of organic life; the respiratory, the nutrient, the circulatory, and the reproductive. The vegetable pulmonic apparatus consists of three parts:—

1. Spiral vessels (for the most part found in the excurrent fibres of the leaf) opening into—
2. The stomatal orifices.
3. The inferior parenchymatous layer of the leaf.

The respiratory function is twofold; consisting, first, in the absorption of oxygen from the atmosphere, by the stomata, and its passage into the spiral vessels\*; thus contributing to the elabo-

ration of the *succus proprius*. Secondly, the exhalation by the stomata of the debris of digestion (superfluous moisture and carbon), the latter process being confined, it would appear, to the upper stratum of the leaf; the former dispersing by mere physical exhalation, the latter chemically combining with the oxygen of the atmosphere to form carbonic acid: the products of respiration, therefore, in the animal and the plant, are identical; to wit, watery vapour and carbonic acid.

The function of digestion also resides in the leaf, its effect being directly opposed to that of respiration. It consists in the fixation in the leaf of the carbon of the imperfectly assimilated sap (the crude material imbibed by the radical spongelets, viz. organic molecules held in solution by water, and carbonic acid, having undergone partial digestion in its ascent through the vasiform and woody tissue) and the evolution of oxygen.

As plants possess nothing analogous to the stomach of most animals, the conversion of the partially elaborated sap into proper juice most probably obtains by the metabolic force—a chemico-vital assimilative power possessed by each particular cell of the parenchyma. Dr. Lindley, indeed, suggests that the upper parenchymatous layer of the cuticle of plants may possess a digestive power analogous to the stomach of animals.

Plants have two circulations, a *general* and a *special*. The special circulation has already been considered, depending on the presence of a cytoblast within the sap cell; the precise nature of the influence being, however, unknown.

The general circulation of the plant stands strikingly distinguished from that of the animal by the absence of a central propulsive organ—a heart. It consists in the ascent of the crude ingesta through the woody and vasi-form tissue of the alburnum; in virtue, it has been supposed, of the hygroscopic (endosmometric) properties of its component cells; the exciting cause of

\* The essential distinction between the two orders of vessels, spiral vessels and ducts, is, that the function of the former is *purely respiratory*; of the latter, *nutritious*. My friend Dr. Thomas Williams, of the Webb Street School, has shown, by experiment, that artificial obstruction to the stomatal function is followed by disease and etiolation of the leaf; thus proving the patency of the stomata. He also concludes that the spiral vessels communicate by open mouths with the stomach, thus deriving their supply of atmospheric air. The stoma, Dr. Williams ingeniously suggests, is to the spiral

vessel of the plant as the spiracle to the trachea of the insect; "and as, in insects, the tracheæ follow only the centrifugal currents of blood, so in certain plants the spiral vessels follow only the excurrent fibro-vascular layer of the leaf." (Vide paper in *Microscopic Journal*, No. 8). To this might be added the most striking and singular structural analogy between the spiral vessels and the trachea, both consisting of a spiral fibre within an investing membrane.

this action being, according to high botanical authority (Lindley, Du Petit Thouars), the expansion of the leaf-bud at the vegetative season, causing a vacuum which the subjacent fluid rises to supply; the motion of the sap being the effect, therefore, not the cause, of the growth of the plant. Dr. Willshire, however, objects to this, that under the influence of rarefaction the bud and the fluid would expand "*pari passu*." The question, therefore, is still *sub judice*.

The celebrated Decandolle's theory, that the cause of the sap-motion was the vital contractility of the individual cells, applies more to the special circulation, being analogous, as elsewhere stated, to the organic contractility of the blood vesicle.

The reproductive function has already been considered, so that I proceed now to my last proposition; "to consider the process of cellular evolution under certain pathological conditions.

Schwann's incomparable discoveries have led to this inference—that as animals consist, plant-like, of a congeries of cells, each possessing a compound life (the one incidental, subservient to the integrity of the organism, the other independent, preserving the individuality of each particular cell), so their vital properties depend more on the individual vitality of their component globules than any virtue appertaining to their organism viewed as a whole. The pathological application of this principle has led many writers to assign a *subjective* nature to disease; for as the cytogenetic process equally applies to many abnormal formations as to healthy tissues, it follows that the former consist not in perversions of normal structure, but are *bonâ fide* distinct and self-supporting economies; that disease is essentially a *status in statu*, one organization developed within the structures of another.

Many eminent physiologists, *inter alia* my late talented preceptor Mr. Grainger, have most strenuously inculcated the principle, that the higher animals and plants, in progress of development, temporarily exhibit the permanent forms of their inferiors; and it would seem an equally manifest pathological law, that as in their evolution and *perfectionnement* the higher creations preserve an *ascending* metamorphose, so, in their decay and disease a *descending*

morphology obtains; the cytoblasts of higher organisms, separated from their parent structures, developing themselves in a lower grade of activity.

To this principle may be referred the pathology of parasitic growths, as uterine and other hydatids, cancerous and fungoid deposits, &c. *Abortion*, moreover, frequently arises from constitutional causes pertaining to the mother, as fever, exanthemata, &c. occurring during gestation. Now Dr. Henle has rendered it extremely probable that the pathology of miasmo-contagious diseases in general consists in the introduction into the system of an organic parasite; in the above instances decomposing the blood, as fungi decompose certain organic solutions. Adopting this view, the pathology of this somewhat obscure form of abortion consists in the decomposition of the blood by these parasites, converting the product of conception to their own proper economy—the immature organization of the higher to the perfect form of the lower grade of organization; when the former is either expelled as a mole or hydatid, or retained, constituting, there is fair ground to suppose, the substratum of a future polypus, carcinoma, or fungous growth. By a parallel process in the vegetable kingdom, the seed which, under the normal influences of generation, would have become the future barley-plant, under the influence of malting or saccharization develops itself in a lower form of organization, becoming the fungus already alluded to—the *torula* or yeast-plant. The operation of a similar process on the fecundated Graafian vesicles equally applies to the pathology of ovarian disease, whether of the cystiform character, or occurring as an adventitious tumor, enclosing bone, hair, teeth, &c.; in the one case, the perfect type of the lower animal; in the other, the imperfect and eccentric form of the higher one. From the excessive arterial action characterizing various forms of fever, inflammation, and exanthematous diseases, as indicated by the raised animal temperature, and the high cerebral and capillary excitement, the inference is not altogether unentertainable, that a somewhat analogous "*contagium animatum*" may constitute the pathology of the diseases in question: that the pathology of fever, inflammation, and the exanthemata, essentially consist, there-



fore, in a *hyperoxygenated state of the blood*. That the arterial blood-vesicles do really absorb oxygen, and retain it in their interior, has been decisively proved by the experiments of Schultz, as also that in the elaboration of the blood-nuclei, or conversion of arterial into venous blood, carbonic acid is absorbed by the venous blood-vesicle. It is quite evident, therefore, that a certain amount of carbon is necessary to the formation and integrity of venous blood; this carbon being probably obtained, as aforesaid, by the decomposition of albumen into gelatine. The appropriation of this carbon, therefore, by the parasitic formations, must be attended by an excess of oxygen in the system. The depression marking the access of fever, leading many to suppose the nervous system primarily and permanently involved, is common to the first effect on the system of any noxious agent of whatever nature. It no more constitutes the pathology of fever than the collapse of system from the shock of a severe accident, or surgical operation, or even the bare announcement of it to the patient, constitutes the pathology of the parts concerned. The implication of the several organs being in the ratio of their vascularity, also points to the vascular origin of these diseases. Of this fact, perhaps, the *brain* and the *spleen* furnish the best examples; the extreme frequency of implication of the *former* having led to Dr. Clutterbuck's well-known theory, that fever universally depended on phrenitis; whereas, according to the present view, the brain suffers merely by reason of its superior vascular endowment, the blood itself being the *principium et fons mali*; this alteration, moreover, consisting not only in a *disturbance of the balance of the circulation*, causing local determinations and congestions, but in an actual *disorganization of the elements of the blood*. Should this condition of blood really constitute the pathology of fever, it is evident that any plan of treatment, to be efficient, must embrace the *qualitative* as well as the *quantitative* relation of the blood—(an indication regarded somewhat too lightly by the Clutterbuck school)—that the curative efforts should be directed to the improving the quality as well as lessening the quantity of the depraved secretion.

It may be thought that these views smack too largely of the humoral pathology. The disputes, however, between solidism and humorism are now recognized but as an affair of words—"vox et præterea nihil"—there being, as observed by Andral, *but two classes of solids*—those that *make*, and those that *unmake* the blood; whence no modification of a solid can obtain without deranging the nature or quantity of the materials necessary to form the blood: whilst, on the other hand, the blood in its turn nourishes the solids, which latter, therefore, cannot but be influenced by the blood. "Therefore," say physiologists, "the system, in health and disease, forms but one indivisible whole." This position certainly holds good with respect to the normal condition of system, also of a large class of diseases; that is, of those originating *ab intra*; of non-contagious diseases, where the *materies morbi* is not of a subjective nature, nor directly absorbed into the system. But it must be considered that the ingress of many morbid agents, as the miasmo-contagious class now under discussion, is purely *ab extra*; the cause of disease existing extrinsically to the body, and entering the current of circulation by direct absorption by the venous capillaries. True, some structural modification, however minute, of these extreme vessels must accompany the process, affording slight hold to the solidist; but this does not affect the main question, that the essential condition to the production of febrile phenomena is the absorption of foreign matter into the circulation.

Of the parasitic nature of certain diseases chiefly affecting the lower animals, proofs are not wanting from actual observation. Thus, the silk-worm is infested by a vegetable parasite, constituting the disease termed muscardine. Vegetative growths have been observed on fish (Ehrenberg): vorticella on the toes of the triton punctatum (Henle, Hanover).

Müller states that all diseased growths consist of variously modified nucleated cells—a view entertained by Mr. Kiernan and Dr. Hake, of carcinoma of the hepatic ducts.

With respect to tubercular pathology, Lugol states that the only rational theory to account for their generation



is epigenesis\* (another name for *cellular plasticity*).

According to Dr. Holland's ingenious rationale of *cholera*, there is an analogy between the fermentation of organic fluids and the influence of contagion on the blood†.

And even after death the higher organic tribes may be said to re-exist in a lower sphere of cellular activity. From the pathology and decease of the higher animals and plants, therefore, says a German physiologist, springs the physiology of the lower. The subject is thus masterly handled by Dr. Willshire, in a valuable paper on the *Subjectivity of Disease*. "Disease is an isolation of morbid from healthy cellular life. . . . It may depend on derangement of neither the nervous nor muscular systems; but on the special change of a local form of life, *topical individuality*." Again: "Disease may be in its essence only a lower form of animal or vegetable life to that body in which it occurs; possessing therefore the same objective essence as healthy life, with respect to the whole organism of the new creation, but not with respect to the higher organization in which it occurs." Lastly; "Death results from the extensive isolation of diseased from healthy cells, and the overpowering or negating of the healthy by the diseased life. The whole individualized portions of the body then take upon themselves a new objective mode of life, forming, when the whole body is under the condition of diseased life (the moment after death) new organisms lower in the scale of creation."

In concluding this subject I may be

\* Vide Lugol's lecture in MEDICAL GAZETTE for Oct. 22, 1841. "This writer also roundly asserts that hydatids, lice, and intestinal worms, are now universally admitted to be generated spontaneously. The latter assertion requires some little qualification. More correctly, nothing living can originate but from what has previously possessed life; consequently, all *existence is derivative*—incompatible with the idea of *spontaneity of origin*. I may here observe that the psychological bearings of this and analogous questions have been studiously avoided, as incongruous to true physiological discussion. The *morale* of the subject I have elsewhere endeavoured to consider. Vide Remarks on Vital Principle, M&D. GAZ. Feb. 1842.

† Both depending therefore on parasitic action. The structural alteration on which, according to Schultz, depends the condition of the blood in Asiatic cholera, is paralysis of the organic contractility of the blood vesicles, and the consequent suspension of their functions.

allowed perhaps to remark, that the recent discoveries, in cellular revolution, of Schleiden and Schwann, cannot but be regarded as a vast and most important accession to physiological science. For, whether from the low state of microscopic art, or ignorance of the true mode of investigation, certain it is that the origin and evolution of organized beings, though commanding the attention of the learned and the curious in all ages, remained a sealed book until the late researches of the above-mentioned physiologists. Exploring these arcana of creation in the true spirit of the inductive philosophy, the film of hypothesis dispersed before them, and rescued from the shadowy domain of fancy and conjecture, embryology, in common with other sciences, now rests on the *terra firma* of observation and experiment. And though the lucubrations of the master spirits of old, from the immortal Galen to our own illustrious Harvey, grace henceforth the *historic* rather than the *scientific* page—though the fairy-land of physiology sunk beneath the effort—who can doubt that on the sounder basis of well-attested fact and cautious deduction shall arise a goodlier fabric than ever floated in airy romance before the eye of imagination? Doubtless, in these subtle and delicate operations of nature, as in her more patent departments, the master key is *simplicity*. Yet would it seem an ordination of the present economy that we arrive at the knowledge of simpler and more elementary causes but by a previous analysis of their more complex and multitudinous effects; by an *à posteriori* rather than an *à priori* argument. And a wise ordination this, eminently displaying the adaptation of the material to the intellectual constitution; so many curious collocations to whet the appetite of inquiry, the discovery of so many else impenetrable analogies, to reward our toil.

Sir Isaac Newton has demonstrated that all the endlessly diversified phenomena of the physical universe depend on the operation of one or two simple but general laws: and it remains for a Newton in physiology to achieve in the cause of vital dynamics a like important generalization. The brilliant discoveries of Schleiden and Schwann form a vast item towards such a con-

summation\*. But I fear I am trespassing too far on your valuable columns. I will merely add, that, taking into consideration the difficulty of verifying statements by data obtained from personal observation, the conflicting opinions to be reconciled, the extent and intricacy of the subject, and the engagements of active practice, I trust your readers will leniently regard those many errors to whose existence I assure them I am no stranger.

Bicester, July 18, 1842.

OBSERVATIONS  
ON THE  
STATISTICS OF PHTHISIS,  
AND ON THE INFLUENCE OF CLIMATE AND  
OCCUPATION IN THE PRODUCTION OF  
THAT DISEASE.

“Anjourd’hui on ne se propose plus en médecine de causes à défendre, il n’y a plus d’enthousiasme pour de pures conceptions, quelque soit le génie qui les enfante; on le réserve pour la vérité inconnue, je dirai même imprévue, et poursuivie par les méthodes qui y conduisent avec le plus de sûreté.”—MARC D’ESPINE.

[Continued from p. 529.]

THE climate of the Bermudas, which, like that of Madeira, is very equable in temperature, has been by some, on this account, supposed to be well calculated to benefit consumptive patients.

An examination of every peculiarity in the climate of that group of islands, and an investigation into the prevalence of phthisis at that station, will, therefore, be particularly interesting and instructive.

Wreck Hill, the most westerly point of the Bermudas, is situated in  $32^{\circ} 15' 20''$  N. lat., and  $64^{\circ} 50'$  W. long. The length of the group, from St. Catherine’s point to the western extremity of the islands, is not more than twenty miles, and the breadth no where much exceeds six. The nearest land is the coast of Carolina, distant E. by S. nearly six hundred miles. Part of the country is still covered with forests. From the small size of the islands, and their

formation (the Bermudas being merely a coral reef) there are no springs or rivers in the islands, and the highest point in the whole group rises no higher than 180 feet.

The principal military station is at St. George’s Town, situated in the island of the same name, which, however, is not the principal island in point of size, being not more than three miles in length, and in breadth no where exceeding half a mile.

Considering the very few observations that have been made to ascertain the dew-point, even at those places at which extensive series of other meteorological observations have been made, we may deem ourselves fortunate in having so large a number of direct observations of the dew-point as were made by Lieut.-Col. Emmett, at St. George’s, Bermuda. But unfortunately, here, as elsewhere, the observations of the dew-point are confessedly those on which the least reliance is to be placed. The other observations by this gentleman appear to have been made with great care, and to be, in every respect, worthy of confidence.

The pressure of the atmosphere is very constant at the Bermudas, and the daily variation in the height of the barometer very small; the difference between the mean height of the barometer at 9 A.M. and the height at 4 A.M., deduced from daily observations throughout one entire year by Col. Emmett, being only  $\cdot 030$  inch; the mean height, deduced from 295 observations, being, at 9 A.M.,  $30\cdot 094$ , and at 4 P.M.,  $30\cdot 064$ . The mean height of the barometer during the year was  $30\cdot 017$ , the greatest height, corrected and reduced,  $30\cdot 664$ , and the minimum observed  $29\cdot 414$ ; the extreme range in the course of the year being, thus,  $1\cdot 25$  inch. The instruments were placed at a height of 60 feet above the sea, for which no correction is made in the height of the barometer. The periods of greatest and least elevation were found to be at 9 A.M. and 4 P.M.

The highest temperature observed by Col. Emmett appears to have been  $82^{\circ}$ , which he records on the 2d Sept., 1836; the lowest temperature registered,  $47^{\circ}$ , was in January 1837, giving a difference, or range, of  $34$  degrees. The mean temperature of the year 1836-7 was

\* Dr. Budd, of Bristol, has well remarked, in an able paper on the Pathology of Cancer, that the identification of plants and animals in *ultimate structure, mode of development, and growth*, is a more important generality than any yet attempted in physiology; yet it must ever be recollected that both animal and vegetable tissues, and pathological deposits, essentially differ in their nature.

\* Lond. and Edin. Phil. Mag. 1837, p. 449, and 1838, p. 42.

67·5; but according to the Army reports, the temperature, taking the average of a number of years, is much higher, the mean temperature being stated to be 73·5. Tulloch, in addition, gives the following as the greatest, least, and medium diurnal range of the thermometer at the Bermudas.

Greatest range, 12° Fahr.

Least . . . 5° "

Mean . . . 5½ "

The next and, on my own theory, the most important observations to be discussed, namely, those relating to the dew-point, are, as above observed, the least accurate of all. The dew-point appears to have been generally taken by using a cooling mixture in a copper-gilt cup: some observations were made with the wet-bulb thermometer, but the observations themselves are not always given, and the deduction of the dew-point from them appears to have been made by the erroneous formula given by Berzelius\*, and deduced from the experiments of Bohnenberger.

The mean dew-point for the whole year is stated, from these observations, to be 60·8, which, the mean temperature of the year being 67·5, gives a difference between this latter and the mean temperature of 6·7. Although the temperature varies but little during the year, the difference between the mean temperature of each month and the corresponding dew-point is subject to considerable variation, as the following table, which supplies complete information on this point, will shew.

		Mean tempera- ture.	Mean dew- point.	Differ- ence.
July	1836	75·79	74·0	1·79
August	"	76·65	72·5	4·15
September	"	76·75	69·25	7·50
October	"	73·07	64·0	9·07
November	"	65·9	54·8	11·1
December	"	71·6	61·0	7·6
January	1837	57·9	52·9	5·0
February	"	58·89	54·0	4·89
March	"	59·3	53·8	5·5
April	"	62·8	56·2	6·6
May	"	69·13	61·7	7·43
June	"	73·2	67·8	5·4

Thus, the difference between the mean temperature of the month, and the mean dew-point of the same month,

was six and a half times as great in October as it was in July. The quantity of rain which fell in the twelve months ending July, 1837, was 50·31 inches. The number of days in the year on which rain fell is not given.

Reviewing, then, the above facts, we find the principal points as to which the climate of the Bermudas is remarkable, to be the following: first, the great pressure of the atmosphere, and the slight variation to which it is subject; secondly, the uniform temperature of the air; and lastly, the considerable quantity of aqueous vapour diffused in the atmosphere.

The equable and high temperature of the Bermudas long induced many persons to believe that the nature of the climate was such as to render this colony an advantageous place of residence to consumptive patients. We shall now see the inaccuracy of these conceptions, and how utterly they have been refuted by experience. Notwithstanding the supposed advantages of the climate of the Bermudas, phthisis is very prevalent among the troops stationed there; as might, indeed, conformably to the theory which supposes that the frequency of phthisis increases, *cæteris paribus*, as the difference between the mean temperature and the mean dew-point diminishes, be expected from the above statement of the nature of the climate. This will be shewn by the following table, which, like the preceding ones, gives the number of admissions and deaths from all diseases, and also the same for phthisis separately. Returns for the years 1817 to 1836 inclusive are given, excepting the years 1818 and 1819; the returns for these years are omitted, as in 1818 the colony was visited by epidemic yellow fever, and in the following year, in addition to the effect produced by a similar calamity, the returns are further vitiated by referring to only three quarters of the year. (See table top of next page.)

The total strength being 10,812, the average strength in each year was 600; which, the total mortality from phthisis being 68, and the annual mortality from the same disease 3·7778, gives an annual mortality from phthisis of ·62963 in each 100 troops. The annual number of cases admitted into the hospitals under the head of phthisis was 5·38889, or at the rate of ·898148

\* *Traité de Chimie*, vol. 8, p. 254.

Year.	Strength.	Admissions.	Deaths.	Admissions: Phtthisis.	Deaths: Phtthisis.
1817	439	287	4	5	3
1820	332	476	11	7	5
1821	349	414	6	0	0
1822	325	425	13	2	2
1823	288	390	8	0	0
1824	212	336	10	0	0
1825	268	598	4	1	0
1826	616	1120	11	5	3
1827	666	1154	9	12	5
1828	701	1065	8	10	4
1829	722	805	14	8	8
1830	769	1153	9	10	5
1831	1182	1880	22	7	8
1832	1147	1258	25	11	9
1833	776	1127	24	4	3
1834	714	955	17	3	3
1835	657	496	7	2	1
1836	649	515	21	10	9
Total	10,812	14,454	223	97	68

per hundred of the average strength. Diseases of the respiratory organs generally are not very prevalent in the islands, though inflammation of the lungs, and, as we have just seen, consumption also, are extremely common: the ratio of mortality from these two diseases together being indeed higher than among the troops in the United Kingdom. The annual ratio of admissions and deaths from diseases of the lungs generally was as below:—

Admissions 1·26 per 100.

Deaths . . . 87 „

It is hence evident that the climate of the Bermudas, although remarkably equable, is, nevertheless, extremely unfavourable to health, so far as phthisis is concerned. The mortality from this single disease is indeed singularly high, and, on all other hypotheses than the one I am now illustrating appears to me to be quite inexplicable. Major Tulloch, in his Report, notices the great frequency of phthisis at the Bermudas, and the difficulty of accounting for the fact, observing that it “appears more remarkable when we consider the uniformity of temperature at the Bermudas during a great part of the year, and the absence of those extremes of cold to which such diseases in northern latitudes are frequently attributed. It is sufficiently demonstrative of the erro-

neous nature of the ideas generally entertained on this head, particularly as regards consumption, that 9 per 1000 of the troops at this station are attacked annually by that disease, of whom nearly three-fourths die before an opportunity offers for their removal; while in Great Britain the proportion attacked annually is but 6·4 per 1000, and we shall presently have occasion to observe, that even in the most inclement regions of British America the proportion is equally low.”

The Reports for the Bermudas do not furnish the exact number of deaths. The War Office Returns give for the total number of deaths a number greater by 40 than that given in the Medical Reports. Most of these were probably, however, violent deaths; but in the six years, from 1831 to 1837, there died either at Chatham or on their passage home from this colony, seven troops. These omissions, if supplied, would alter, to a considerable extent, the returns for phthisis.

Let us now proceed to notice some other colonies where, though the temperature be very equable, phthisis is, nevertheless, a very common disease. One of the most singular and unexpected facts which were brought to light, and unequivocally demonstrated by the Army Medical Reports, is the extreme prevalence of pulmonary consumption among the troops stationed in the West Indies. In accordance with the received hypothetical notions, the climate of the Antilles had been generally considered to be beneficial in phthisical cases, and several of the West India islands had not unfrequently been made the place of exile for consumptive patients. Concurring with the unfounded hypothetical views just alluded to—views totally unsupported by any number of facts—a writer of celebrity, Sir J. Clark, when noticing the climate of Antilles, thus expresses himself\* :—“I believe they would afford a better winter climate, in many cases, than any of those which I have noticed.” The publication of the Army Medical Returns has placed the unhealthiness of the climate to phthisical persons in so clear and indisputable a point of view, as to render the occurrence of such an error as sending patients predisposed to con-

\* The Influence of Climate, &c. 1829, p. 164. I have not got a later edition of this work at hand to refer to.

sumption to reside in the Antilles, now almost impossible.

From the following analysis of the Medical Returns, it will be at once evident that phthisis is a much more common disease in those islands of the lesser Antilles which belong to Great Britain than in England and Wales. Rather in opposition to this, M. Chervin has stated\*, as the result of his own experience, that phthisis, though common enough in the French West India islands, is less frequent in those colonies than in France; and he also adds, that the disease is generally less rapid in its course in the low regions of the tropics than in European latitudes. The assertion of M. Chervin, as to the comparative frequency of the disease in the Antilles and in France, must, notwithstanding his deservedly high reputation as a medical philosopher, be taken with some degree of caution, being unsupported by any statement of facts, and founded merely on his own, of course, limited observations.

As I intend, in the sequel, entering into a detailed examination of the medical statistics of every part of the continent of America, I shall defer till then presenting the results of any inquiry as to the frequency of consumption in British Guiana and Cayenne, confining myself on the present occasion to a slight and partial discussion of the medical statistics of the West India islands only.

It may be worth while, before proceeding to investigate separately the climate and medical statistics of each island, to take a rapid glance at the climate of the Antilles generally; the result of which will, I think, shew that the climate of the Antilles fulfils every one of those conditions which are usually considered as preventive of phthisis.

The usual height of the barometer is considerable; and the range in the height of the mercury is in none of the islands greater than from a quarter to half an inch. The temperature is high; the mean temperature given by Tulloch being  $80\frac{1}{2}^{\circ}$ ; and perhaps the average temperature slightly exceeds that of places in similar latitudes ( $10^{\circ}$  to  $20^{\circ} 30'$  N. lat.) The mean temperature of St. Kitt's is  $81^{\circ}$ ; and in none of the

islands is the mean temperature above  $82^{\circ}$  or below  $79^{\circ}$ . The extreme range of the thermometer is remarkably small; in the most variable of the islands the range in the course of the year does not exceed  $15^{\circ}$ ; whilst in some it is not greater than  $4^{\circ}$ . In the series of observations continued by Mr. Daniell in London for three years, the extreme difference was  $79^{\circ}$ ; so that the range of the thermometer is nearly twenty times as great in London as in some of the West India islands. But in some years the extreme range of the thermometer in this country much exceeds that mentioned above. In 1838 the range of the thermometer in the neighbourhood of London considerably exceeded  $80^{\circ}$ .

The first in order of the West India islands which we shall take is Trinidad. A great part of this magnificent island, which extends from lat.  $9^{\circ} 30'$  to  $10^{\circ} 51'$  N. and from  $60^{\circ} 30'$  to  $61^{\circ} 20'$  W. long., yet remains uncultivated; and many parts of the island are as yet even unexplored. This latter circumstance arises partly from the unhealthiness and swampy nature of many of the unexplored parts, and partly from the difficulty which the natural features of the country interpose in the way of such an undertaking. The coast except on part of the western shore where it is perfectly flat, is generally lofty, but more especially so on the northern extremity of the island, where a romantic range of mountains rises occasionally to the height of 3000 feet. The centre and south of the island are also occupied by chains of hills, though of less elevation. Many of the hills and mountains of the island are covered with gigantic forest trees of enormous size, and all are clothed to the summit with the richest and most luxuriant tropical vegetation. The plains are very commonly marshy and extremely fruitful; rivalled in fertility only by the plains of the neighbouring continent. Though there are no rivers of any size in the island, springs are numerous, and water is very abundant.

Major Tulloch, in his Report, does not give any account of the height of the barometer at this station. It may, however, be presumed that it does not differ much from that in other islands, or in the neighbouring continent of America. The mean temperature is stated to be  $79^{\circ}$ , and the highest tem-

\* Gazette des Médecins Practiciens, Dec. 1839; and MED. GAZETTE, 1840, p. 636.



perature observed in five years 88; the minimum registered in the same period being 70.

The dense vegetation with which the greater part of the island is covered, the high temperature of the air, and the nearness of the vast and almost impenetrable forests of South America, the coast of which country is not more than 12 miles distant from Trinidad, and from which torrents of vapour are continually rising, would all lead us to suppose that the atmosphere of this island must be constantly charged with moisture. The quantity of rain, however, is less than in British Guiana, and much less than in Cayenne; and Major Tulloch, in his Report, states that the quantity of rain is diminishing very materially with the progress of cultivation. The following was the fall of rain in three years at Trinidad:—

1825	-	62.93 inches.
1826	-	57.91 „
1827	-	61.84 „

Mean 60.89

There is here, as in other tropical countries, a wet and dry season; the latter commencing in December and ending in May. Rain is not uncommon in June and July; but the real rainy season occurs in August, September, and October. At the end of October the rains begin to become more slight, and at the commencement of December the dry season begins. In 1830 rain fell on 211 days in the year. The diurnal range of the thermometer is perhaps greater in this island than in most of the others.

No information is given in the Report as to the general height of the dew-point at Trinidad, and I am only acquainted with one solitary observation of the dew-point in this island to be met with elsewhere. Col. Sabine\* found the temperature of the air at the level of the sea to be 82°, while the dew-point was 77°. At 1060 feet above the surface both were 76.5. The height of the barometer, time, and date of the observations, are not given.

We may now proceed to show the effect which such a climate has on the mortality of the troops. The returns for twenty years show the following to have been the rate of mortality from all

diseases, and from diseases of the lungs:—

*Total Deaths Annually.*

White troops	-	106.3 per 1000.
Black „	-	39.7 „

*Deaths from Diseases of the Lungs Annually.*

White troops	-	11.5 per 1000.
Black „	-	16.4 „

Not having any account of the mortality amongst the civil population, I need not here enter into a description of the situation of Puerto d'Espana, the capital of the island; there being but few troops stationed there. Almost all the troops are stationed at the Barracks at St. James, distant about two miles from Port of Spain.

Although the soil on which the buildings stand is of a sandy nature, yet, from being situated close to the Cocorite marsh, and exposed to the currents of air which sweep over the neighbouring valley of Maraval, and so become saturated with vapour, the atmosphere at this station is most likely more humid than at Port of Spain, and many other parts of the island. The following table shows the mortality amongst the white troops at Trinidad.

Year.	Strength.	Deaths by all Diseases	Deaths by Phtisis.*
1817	553	142	17
1818	377	150	2
1819	230	35	1
1820	133	4	1
1821	256	6	2
1822	136	9	0
1823	132	8	0
1824	162	11	2
1825	184	20	1
1826	271	25	0
1827	478	38	1
1828	353	59	4
1829	380	8	1
1830	370	15	1
1831	355	22	3
1832	369	27	1
1833	381	19	0
1834	382	16	1
1835	338	21	0
1836	357	24	0
Total.	6,197	659	38

\* Daniell's Meteorological Essays.

From this table the annual amount of mortality from phthisis appears to be 1.9 in the whole force, or a mortality from this disease of .6129 per 100 of the average strength. It is worthy of remark that, in this island, as at most other colonies in the tropics where black troops are stationed, the mortality from phthisis is far greater amongst the negroes than amongst the European troops. This is generally attributed to a naturally greater predisposition to consumption in the negro. I am inclined to consider some part of the mortality from phthisis amongst the black troops as due to the infrequency of the acute diseases of the tropics amongst them. In the European, the heat and humidity of tropical countries induces intermittent or remittent fever; in the black, it does not appear to have this effect in an equal degree, and as the general mortality is thus reduced much lower amongst the black than amongst the European troops, the mortality from chronic diseases assumes more nearly the amount which is natural to it.

The mortality amongst the black troops during the same twenty years is given in the table below.

Year.	Strength.	Deaths.	Deaths by Phthisis.
1817	732	33	11
1818	504	22	7
1819	603	74	7
1820	610	19	10
1821	462	23	9
1822	555	19	8
1823	521	22	6
1824	504	11	5
1825	356	10	3
1826	349	10	1
1827	327	6	1
1828	298	9	3
1829	437	18	0
1830	363	6	2
1831	327	13	4
1832	304	13	0
1833	269	9	2
1834	298	7	0
1835	282	4	1
1836	214	2	0
Total.	8,309	330	80

The annual mortality from phthisis in the whole garrison being 4, and the average strength 415, we obtain for the annual mortality from phthisis per 100

of the mean force, the fraction .9604. It thus appears that the rate of mortality from phthisis amongst the white troops is considerably less than two-thirds of that occurring from the same disease amongst the negro troops. It must be remembered, however, that although the returns extend over a considerable number of years, yet the strength was but small; and that, therefore, implicit confidence cannot be placed in the deductions which may be drawn from the reports. This observation applies with still greater force to the facts exhibited in the returns relative to the white troops, the general strength being less than that of the black troops, and the accuracy of the returns being vitiated by the invaliding of the white troops. The military force of Great Britain, stationed in all the British West India Islands, in British Guiana, and Honduras, has not generally exceeded eight thousand five hundred. The force stationed in the French Islands of Guadaloupe and Martinique amounts to seven thousand.

M. Brouc\* has furnished an elaborate paper on the medical statistics of Martinique; but this author has confined himself principally to the discussion of the mortality generally, without reference to the causes of death. The information collected by M. Brouc relates, for the most part, to the town of Fort Royal (north lat. 14°35', west long. 61°7'), and the hospital there, the deaths recorded being only those which happened in the maritime hospital of Fort Royal. Diseases of the digestive organs appear to be much the most common maladies, and next to these catarrhal affections; but no account is given of the nature of the cases recorded under the latter head, or the frequency or fatality of phthisis in the island. It is shown by the facts collected by this physician, that the diseases of the digestive organs constitute one-half of the cases admitted into the hospital. Thus, in the years 1829, 1830, and 1831, during which years there was no remarkable epidemic, of the 7,960 cases which were received into the hospital, the proportion between the diseases of the digestive and respiratory organs (*affections catarrhales*), was distributed as follows:—

Diseases of the digestive organs 4009  
Diseases of the respiratory organs 1953

\* Annales d' Hygiène, vol. 18, 1837.

No mention of any case of phthisis is made by M. Brouc as happening at Fort Royal, though, from the nature of the climate, phthisis might have been presumed to be a very common disease in the island.

From a meteorological register kept at the hospital of Fort Royal, from the month of November 1830 to the end of October 1831, we find that in every month, except one, in the year, the hygrometer of Saussure marked 100, or the point of saturation: in the month of February alone it did not reach this limit, the highest point observed in that month being 98°. The mean state of the hygrometer, the indications of which were registered three times a day, was 89·84, the maximum being 100, and the minimum at noon being 55. The mean temperature of the year was 26·89 centigrade (= 80·42 Fahr.); the highest temperature was 32 cent. or 89·6 Fahr.; and the lowest 19 cent. = 66·2 Fahrenheit. This gives an annual range of temperature = 23·4 Fahr., a much greater variation than is experienced in any of the British West India Islands. M. Brouc, it should be mentioned, does not give the actual temperatures observed, but only the mean maximum and minimum at three different periods of the day (6 A.M., noon, and 6 P.M.) in each month: the range of temperature must, therefore, have been still greater. The mean indications of Saussure's hygrometer being nearly 90°, the tension of the steam present in the atmosphere would, according to the table of M. Gay-Lussac, be 79 hundredths of the tension of the steam at the point of saturation: this condition, the mean temperature being 80·42, would give the mean dew-point about 74½ Fahr. or a difference between it and the mean temperature of the air, of rather less than six degrees Fahr. The mean maximum and minimum heights of the barometer were 30·16 and 29·88 English inches respectively; giving a difference of ·28 inch.

M. Brouc gives but little information respecting the mortality and diseases of the town of St. Pierre, situated in lat. 14°44', and west long. 61°14', and containing a population of 17,000 inhabitants. Phthisis, however, is mentioned as having caused some of the deaths in the hospital there, although the greater number of deaths were

there, as at Fort Royal, caused by dysentery, as the following figures will show:—

	Total deaths.	Phthisis	Deaths from dysentery.	Gastro- enteritis.
1830	92	3	46	23
1831	61	0	32	6

More recently, however, M. Louis has made a report to the Institute\* on a paper presented by M. Rufz, (a young and able physician resident at St. Pierre, who has devoted himself especially to the study of phthisis), on the frequency of pulmonary consumption in the island of Martinique, and the effect of the climate on the symptoms and duration of the disease. This paper alters much the opinion we might be hastily induced to form from the statement of M. Brouc alone. Phthisis, according to M. Rufz, is the most common chronic disease at Martinique. Out of 1954 cases of every description, 123 were cases of phthisis. The experience of M. Rufz has led him to conclude that the disease is seldom met with in children, and that the creoles are more subject to phthisis than the negroes and the natives of Europe. According to M. Chervin, it is only in some particular months, namely, November, December, and January, and even in these months only during the period that the north-east wind blows, that the disease makes rapid progress; and this is in some degree corroborated by the experience of M. Rufz, who has found the progress of the disease to be extremely variable.

Frequent as phthisis is in Trinidad and Martinique, it is, as we shall now see, much less so in St. Vincent's.

The size of this island, which is about eighteen miles long, and eleven broad, is much inferior to that of many other of the Antilles; and the character of the surface and the soil differs much from that of the two islands of which we have just spoken. The proportion of the entire surface of this mountainous and beautiful island (lat. 13° 10' North, long. 60° 37' West, and distant about 70 miles N. E. of Grenada), which is under cultivation, is but small, and does not probably exceed one-third. But of the uncultivated part of the island there is little that is swampy; and the

\* At the sitting of the 5th of April, 1842.

mountainous parts, though covered often with forest trees of the noblest and most gigantic growth, present little or none of that rank and dense vegetation which is common enough in most other of the West India islands. Springs and rivulets are numerous; and the island generally is well watered, as might be conjectured beforehand, from the lofty and bold nature of the coast, and the height of some parts of the interior of the island, which arrest the clouds, and cause a great quantity of rain to fall in the island.

The mean temperature, as deduced from the observations given in the report, which were continued for five years, is  $80^{\circ}$ ; the mean monthly maximum, which is in October, is stated to be  $85\frac{1}{2}^{\circ}$ ; and the mean monthly minimum happening in January  $74\frac{1}{2}^{\circ}$ . The temperature from July to October is more variable than in the other islands; but, excepting in these months, the variations of temperature are neither greater nor more frequent than in the other islands. The fall of rain is considerable, averaging generally from seventy to eighty inches. The dews are also very heavy. The fall of rain at Fort Charlotte was as below:—

In 1831	.	.	.	87.46
In 1832	.	.	.	78.10
				—
Mean				82.78

The fall of rain varies greatly in different parts of the island; and the quantity depends partly on the height of the spot above the sea: thus, at Langley Park\*, eight hundred and fifty feet above the level of the sea, and below the Souffriere, there fell, in 1822, 120.4 inches of rain; while the number of rainy days was the same as at Fort Charlotte. The great number of rainy days is still more remarkable: thus, at Fort Charlotte, in 1832, rain fell on 298 days; and in 1822, on 261 days.

Although much information is afforded with regard to the state of the barometer and thermometer, no information is given, in the reports presented to the House of Commons, with respect to the quantity of vapour usually present in the atmosphere of any of the islands, except St. Vincent's. The in-

formation which is, in this solitary case, supplied, is not, however, of very great value. The observations are registered simply under the head of hygrometer; and it is not stated what sort of instrument was employed. It may be presumed that the column in the report marked hygrometer, refers to the dew-point, and not to the indications of Saussure's hygrometer; as, were it a table of the indications of the hair-hygrometer, the mean degree marked being  $68.86$ , the average height of the dew-point would be only  $61.5$ , or thereabouts, giving a difference between the mean temperature and the average dew-point of  $18.5$  degrees—a degree of dryness which it may fairly be presumed is quite impossible. Supposing the observations given to refer simply to the height of the dew-point, the difference between the mean temperature and the mean dew-point would still amount to  $11.14^{\circ}$ . From what is known of the climate of the rest of the Antilles, it may with reason be doubted whether this estimate of the difference approximates very nearly to the truth; but it may fairly be concluded that the dew-point is lower in this island than in most of the others.

The station at which the troops are principally quartered, and at which the above-quoted meteorological observations were made, is Fort Charlotte, situate about a mile and a half to the north-west of Kingstown, on a high and steep hill, which is nearly perpendicular on the side towards the sea, and rises to a height of about 600 feet above the level of the ocean.

During twenty years, the mortality from bowel diseases and diseases of the lungs was as below:—

	White.	Black.
Diseases of the lungs	10.5	13.0 per 1000
Diseases of the bowels	24.2	11.2 “

The following table gives the mortality from all diseases, and from phthisis, amongst the troops during twenty years. (See top of next page).

This gives a rate of mortality from phthisis of only .551 annually per 100 of the mean force; whilst, among the black troops, the mortality from this disease is still lower, being only .279 per 100 of the mean strength annually. It must be remarked, however, that the number of the black troops was very small; the aggregate strength

\* Major Alexander: Transatlantic Sketches, vol. i. p. 261.

Year.	Strength.	Deaths by all diseases.	Deaths by phthisis.
1817	519	77	5
1818	311	30	0
1819	394	13	1
1820	366	13	3
1821	310	17	3
1822	286	18	2
1823	339	24	2
1824	439	29	2
1825	429	33	0
1826	401	22	3
1827	309	28	1
1828	318	14	1
1829	279	10	0
1830	278	7	1
1831	292	8	1
1832	318	16	3
1833	351	8	2
1834	537	10	3
1835	535	14	6
1836	421	17	2
Total	7432	408	41

during twenty years amounting to only 1075. The total number of deaths of black troops during this period was 39, and the deaths from phthisis three.

[To be continued.]

## INJURIES OF THE HIP.

*To the Editor of the Medical Gazette.*

SIR,

If you consider the following cases of injury to the hip likely to interest your readers, they are at your service.

**CASE I.**—Elizabeth Coleman, a widow, æt. 65, was rode over on 12th May, 1834, whilst crossing the street, and received a very severe injury in the right hip, attended with considerable pain over the great trochanter, and inability to move the limb, which was shortened about an inch, and the foot everted: by gently drawing it down and rotating it, a crepitus was heard.

After the application of leeches and fomentations, it was deemed advisable to place her upon the double-inclined plane for some weeks, well padded, and a thick cushion put at the upper part to give firmness and support to the trochanter, and confined by a broad bandage around the pelvis. The effect of this plan of treatment was that in a few months she was so far re-

covered as to be able to walk about the town with a stick. I afterwards learnt that she died in March 1838.

**CASE II.**—Mrs. Gardner, æt. 53, July 20, 1835, was pushed down in the street by some person, and fell upon her right side; she was carried home, and on examination the right hip appeared swollen and painful; inability to move the limb, which was shortened an inch and a half, and everted, the heel resting in the hollow of the opposite ankle; rotation discovered a crepitus at the junction of the cervix with the trochanter.

She was laid on a mattress, and the double-inclined plane used as in the former case, with the additional cushion: at the end of eight weeks she was able to leave her bed, and walk across the room with crutches. Œdema of the foot and leg, with numbing pains, were felt for a considerable time afterwards, but these gave way to daily friction and passive motion.

The febrile symptoms were not severe. The use of the catheter was required daily at first. I saw her lately. The health is good; shortening or eversion scarcely at all perceptible; and she can walk five or six miles in the day without assistance.

**CASE III.**—Thomas Eales, aged 12 years, Sept. 1837, was riding in a cart; the horse, taking fright, set off, and threw him out upon a bank. He was stunned by the fall, but soon recovered. On being lifted up, he could neither walk nor stand, and referred all his pain to the left hip. He was carried to his house, about a mile, and put to bed. There appeared to be only a slight bruise or ecchymosis over the gluteal region. The easiest position was lying on his back, with the limbs close together. Both were of equal length, neither inverted nor everted. When not disturbed, the left limb was perfectly easy; but any attempt at moving it, more particularly in abduction, caused him to cry out lustily. In this case there did not appear to be any fracture or dislocation. I was sure the head of the femur was still in the acetabulum. Leeches and fomentation ordered to be applied. He slept for three or four hours during the night, and was better the next morning, but still dare not suffer any person to touch him. In this state he continued, till, on the fourth night after the accident, he was



in a dream, and, fancying himself pursued by some persons, quickly endeavoured to make his escape. By this sudden movement some change took place in the part, which set his limb at liberty; and of this he became conscious when he awoke; for in the morning he got up, and walked down stairs out of the house as usual.

The importance of an early discrimination and proper treatment in fractures of the upper part of the femur, is sufficiently attested in the two first cases; and any oversight at first, and neglect, is generally followed by permanent lameness, with its lamentable consequences. A few months ago a case was shown to me of a man who walks about with a crutch and stick, unable to gain his bread, having met with an accident to the hip, by falling out of a waggon about two years ago, and which was not suspected to be a fracture.

There appears to be considerable shortening of the limb; the motions of the hip-joint are very limited; and at times he feels great pain, and says his life is a misery to him.

The late Sir C. Bell observed, "these are the cases that are so apt to injure the practitioner in the country. The patient has a fracture high up in the thigh-bone; there is a shortening of the limb, or the neck of the bone is absorbed; he is lame, he is thrown out of his occupation, ever idle, ever wandering about, ever hobbling from one side to the other. On the market-day, if you see him in a large crowd, you can distinguish him from other persons by the motion of his head; and he is always lamenting that his case was not understood, or that he was so badly treated by the doctor."

I would remark that the double-inclined plane is a suitable apparatus for many of these cases, when it is well adjusted, as it relaxes the muscles; and it also has the advantage of being less complicated, as well as less expensive, than that of Amesbury's—a consideration, in country practice. There is a moveable foot-board attached, so that the limb can be kept in a steady position.

Its utility is acknowledged, by many surgeons, for other fractures of the femur, from the adequate support which it gives to the back part of the

thigh—a principle defective in some of the modern splints.

The thigh-piece should be so constructed that it may be drawn out to any length which is requisite to fit the patient: by this, extension, as well as counter-extension, will be more easily effected: for this purpose I divided it near the centre, and attached to it two sliding bars with screws, to allow of its being separated to any extent: then the intervening space is filled up by pieces of wood made to occupy the vacancy: its application should be first tried on the sound limb.

The addition of a crutch or arm-piece from the axilla to the knee is another advantage in fractures of the shaft of the femur, as it tends to keep the patient in a straight line, and prevents that unsightly twist so often observed in these accidents. Mr. Skey alludes to this point, and strongly recommends it. His clinical lectures on the subject of fractures, which were published in the *MED. GAZETTE*, merit great attention.

I have used the doubled-inclined plane in fractures of the leg with good result, where the object has been to relax the *gastrocnemii* muscles, though I am aware it is now almost superseded by Liston's splint. Lastly, a method which I always adopt, preparatory to the patient's getting up, is to remove every thing from the limb two days before, and direct it to be washed with soap and water, and anointed with soothing embrocation. This plan will be found to be of service more especially in fractures of the lower extremity, as it assists the muscles in regaining their wonted action, and expedites recovery.—I remain, sir,

Your obedient servant,

JOHN COLLIER, M.R.C.S.

Brackley, Aug. 13, 1842.

## SMALL-POX AND VACCINATION.

*To the Editor of the Medical Gazette.*

SIR,

IN the number of your journal for the 2d of July last, I observed a communication from Mr. Metcalfe, in which he asks for "the results of the experience of those who have seen vaccination performed in the incubative stage of small-pox." As I had the opportunity

of observing this, together with some other points relative to small-pox, under somewhat unusual circumstances, and as every thing relating to that disease is interesting to the profession, perhaps you will deem the following suited to the pages of the GAZETTE.

It will probably be in the recollection of your readers that the small-pox prevailed as an epidemic on the coast of Mozambique, *i. e.* the eastern coast of Africa, in the years 1839 and 1840. A slaver, having on board about 500 slaves, with the small-pox amongst them, was chased by H. M. Sloop of War "Lily;" she ran on shore and was wrecked: the crew escaped by swimming: about 100 slaves were drowned, and more than 300 were taken into the "Lily," a sixteen-gun ship. As is customary, she ran for the nearest British port, which was Port Louis, in the Mauritius, where she arrived on the 20th June, 1840. In the passage, 90 of the slaves died from small-pox, or exhaustion produced by confinement. Their arrival at Mauritius excited considerable alarm, as the small-pox had not visited that island for upwards of forty years.

Quarantine and hospital ships were immediately instituted, of which the government placed me in charge. The excellent medical chief of the island, Dr. St. John, just at this juncture received the journal containing the experiments of Mr. Ceely, and desired me to repeat his experiments, sending on board my hospital ship seven cows of different ages, and in various states, for this purpose. These cows were exposed to the fomites of the disease, and I inoculated them in every possible manner, and in various parts of their bodies, *viz.* teats, udders, mucous membrane of vagina, rectum, and nostrils, with matter in every stage; also by inserting scabs beneath the cuticle; but I did not succeed in producing vaccinia: the utmost effect was slight inflammation about the punctures. Now, although this proves nothing against Mr. Ceely's cases, it presents one fact, *viz.* failure of the most favouring circumstances, in a tropical climate, to infect the animal with small-pox; and, therefore, if we admit the inferences which flow from Mr. Ceely's experiments, it must be only under very peculiar circumstances that they will succeed.

It is of course well known that the disease reached the island; it did not do so, however, from the inefficiency of the quarantine. The first case which occurred on shore was in a man who had gone alongside the "Lily" during her stay in the port, and received some provisions from her without actually himself going on board. On the first appearance of the symptoms he was sent into quarantine; his house was immediately closed, guarded, and fumigated; but in a few days two other cases were reported in persons with whom he had had communication; from them the whole island became affected, and the mortality was considerable.

From the length of time which had elapsed since small-pox had visited that country, vaccination had of course been very much neglected, and at the first alarm vaccine matter could not be procured: it was this circumstance which made us very anxious to succeed in procuring a supply upon Mr. Ceely's plan.

Soon after vaccine matter arrived, I had charge of the small-pox hospital on shore, and used it upon all persons indiscriminately, and upon every day of the period of incubation of the small-pox, and even immediately upon the first attack of fever. With regard to the results, in the former cases it was my own conviction, and I believe it was the impression of all who witnessed the practice, that the small-pox was rendered milder, and was indeed distinctly modified; but, as might be anticipated, the more advanced the vaccine vesicles were upon the accession of the fever, the more marked was the effect upon the small-pox; and the less forward the vesicle, the more it was itself disturbed and deviated from a normal course; for I must say, that I never witnessed a perfect vesicle passing through all its course naturally when the small-pox infection had been received. In Mr. Metcalfe's case he deemed the progress of the vaccine vesicle perfect.

With respect to the vaccination of persons who are actually suffering from the preliminary fever of small-pox, as I am inclined to believe a favourable influence is exerted to a certain extent, although it be but small, the practice has much to recommend it; the power of our remedial means in small-pox is too inconsiderable to warrant us in re-

fusing the least accession to it. I should, therefore, practise and recommend the insertion of vaccine freely, and by many punctures, when a patient comes under treatment, the instant the nature of the fever is discovered.—I am, sir,

Your obedient servant,  
W. H. GARDNER, M.R.C.S.

High Street, Hastings, Aug. 10, 1842.

ON THE  
DISCREPANCY OF MEDICAL DIAG-  
NOSIS IN DISEASES OF THE  
SCALP.

*To the Editor of the Medical Gazette.*

SIR,

In your valuable journal, (No. 767, p. 742,) Mr. Phillips alludes to the discrepancy of medical diagnosis in scalp diseases: the fact is too well known, and the mischief every day felt, from the unsuccessful method adopted for the treatment of these diseases.

The last 100 cases I class as follows:—

50 Eczema; 25 Porrigo scutulata; 15 Impetigo; 4 Pityriasis; 3 Herpes; 2 Lepra; 1 Psoriasis.

Previously, of 22 cases examined at the Deaf and Dumb Asylum a few days back, were eczema 14, porrigo 5, impetigo 3.

This variance in the classification I easily perceive arises from Mr. Phillips indiscriminately classing porrigo furfurans and eczema capitis, which is undoubtedly incorrect; the former being a chronic condition of porrigo scutulata, and at the commencement of the disease pustular; whereas the latter (eczema) is purely a vesicular disease, and must not be confounded.

Dr. Bateman (Dr. Willan errs simply in making the porrigo furfurans a separate species), and most other writers, at least of any note, have fallen into the same error: Mr. Erichsen, an author of 1842, does no better.

This discrepancy in part accounts for Mr. Phillips not having met with, in his public practice, more than six cases of porrigo in six years.

In public and private practice combined, I can prove I enter more than six cases of porrigo in six months. I have done for years

Until this discrepancy be removed, so long shall we hear of the unsatisfactory manner the treatment of scalp diseases is effected. To point out a method best likely to accomplish the much-desired object is my sole cause for trespassing on your pages; and I believe the best antidote would be, for medical men who teach this much neglected branch, dermatology, to form themselves into a committee, and publish the result of their proceedings; and very soon this opprobrium of our profession would cease to exist.

With a very little trouble, and much less of expense, a thousand diseases of the scalp could be mustered for examination in London at any time, if sanctioned by the profession.—I am, sir,

Your obedient servant,

J. H. HORNE, Surgeon.

Skin Dispensary, 2, Princes Street,  
Leicester Square, Aug. 13, 1842.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

*A Practical Treatise on the Diseases of the Scalp.* By JOHN ERICHSEN, M.R.C.S.L., Fellow of the Royal Medical and Chirurgical Society, and formerly House-Surgeon to University College Hospital. Illustrated with Six Plates coloured, from original Drawings by G. Perry. London, John Churchill. 8vo. pp. 192.

THE object of this work is to render the diagnosis of the various diseases to which the scalp is liable, more simple and accurate; and, at the same time, to point out a more rational mode of treatment, by which the cure of them may be more speedily and certainly effected than by the system which has hitherto prevailed with the majority of practitioners. The author attributes, with great justice, the confusion which has so long enveloped these affections to the unphilosophical nomenclature which has been adopted even by the best writers, and by which a set of diseases, differing essentially from one another in their nature, seat, character, causes, and treatment, have been considered as so many species of the same genus, and indiscriminately grouped together under the terms of "Tinea," "Porrigo"—a system by which the

very purposes of classification are defeated. This is the more to be wondered at, as well as regretted, because, although their distinctive characters may be to a certain extent modified and obscured by local circumstances, the presence of hairs, &c. yet, if care be taken, they will be found sufficiently well marked to enable the practitioner, without much difficulty, to refer each disease to the class to which it may belong; and this is of the greater importance, since these diseases will never be satisfactorily understood till we cease to regard them as cases *per se*, and place them in those orders to which their elementary characters mark them as belonging. This opinion Mr. Erichsen declares, and, we think, carries out, by discarding from his treatise specific names, by arranging each disease in strict accordance with its natural properties, and by his care in pointing out the differential diagnosis of these complaints, which is the only sure guide to a safe and rational treatment.

He has prefixed to the work an historical introduction, in which he has sought to determine with accuracy the terms used by the ancients in their writings upon this important part of practice; after which follow some general observations on the nature and treatment of these affections. In the succeeding part of the work each disease is treated of separately, its diagnosis, &c. fully explained, with the best rules for its speedy and effectual cure. A chapter is then devoted to *general* diagnosis of affections of the scalp; and the volume concludes with a succinct account of the diseases to which the hair is subject.

We cannot conclude this brief summary of the contents of Mr. Erichsen's work without strongly expressing our approval of the plates with which it is illustrated. Each of these drawings is beautifully executed, and, being coloured from nature, presents a most accurate and trustworthy picture of the affection of which it is intended to convey a just idea.

The work not only bears testimony to the author's care in recording, in a clear and forcible manner, the results of the observations of others, but also proves that he has neglected no opportunity of availing himself of the large field of inquiry open to his investiga-

tion in the hospitals of London and Paris. It is with great confidence, therefore, that we recommend this treatise to the perusal of the student and practitioner, as a most valuable contribution to a branch of practical medicine which has hitherto not been studied with that care and attention which its importance demands.

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## MEDICAL GAZETTE.

Friday, August 26, 1842.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

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## HEALTH IN TOWNS.

We are glad to find that a subject of so much importance as that which relates to the health of the citizens of our large towns has again been brought under the notice of the public, just before the close of the last parliamentary session. Being one which is connected with no party feeling, and in which each individual is more or less interested, the discussion of it cannot be productive of disadvantage; but will rather, by exciting due attention to the subject, be the means of removing many of the more serious evils which are still suffered to continue in our towns, to the certain detriment of the health of the inhabitants.

We allude, as some of our readers may be aware, to the bill which was lately brought forward in the House of Commons, by Mr. Mackinnon, "to improve the health of towns, by preventing the interment of bodies within their precincts." Having acted as chairman to a committee, to whom this subject had been referred for consideration, Mr. Mackinnon introduces this measure in conformity with the opinion and recommendation of that committee. As to the general principles of the bill, he did not think there could be any difference of opinion. All persons

agreed that sickness was likely to be created by the interment of bodies in churches and populous places. Every one knows such to be the general opinion: indeed, it is not simply a matter of opinion; it is plainly shown, as an undoubted fact, that serious evils do actually result from the effluvia which arise from the decomposition of animal matter so near the surface, and from the poisoned state of the atmosphere around. If, then, such be not only the general opinion, but also a plain matter of fact, it really does seem strange that a practice universally condemned should have been allowed so long to continue. We fully agree with the author of the bill, that some alteration in this respect must sooner or later be made, and that either his own proposal, or some other of the same sort, will eventually become the law of the land. But we should be glad to see it adopted speedily; for, if the present system be universally acknowledged to be a bad one, nothing can be more absurd than to suffer it to continue any longer in operation.

The greatest difficulty which Mr. Mackinnon appears to apprehend, is the expense attendant upon the required alteration. Some outlay must of course be incurred by the removal of bodies to a distance, which the poorer classes would in many instances be unable to defray. This difficulty, however, which it might be feared, at first sight, would form a stubborn obstacle to improvement, is less than would have been imagined; and we are informed by Mr. Mackinnon, that, after the best consideration which he could give the subject, he had arrived at the conviction that the small rate of one penny in the pound would be fully sufficient to meet every necessary charge. Whether the honourable member's calculations are in this respect exactly correct, we do not pretend to say: it seems, however, certain that

the expense would not be great in comparison with the benefit derived; and, at all events, it would not be sufficient to render it an objection to the introduction of so important a measure.

With regard to the formation of cemeteries, there are many points of much interest which relate to their influence on the health of the inhabitants of the country around, and the extent to which their deleterious effect prevails. These are questions of much moment in reference to the situation of such places of interment, and the distance at which they should be situated from towns. Aware of the importance of obtaining some decided information on this subject, the French government lately appealed to the Académie Royale de Médecine for the solution of the questions—"Whether cemeteries do exert a deleterious influence on the atmosphere of the country around? to what distance this influence extends? and how far is it proper that they should be removed from places of habitation." A commission was formed, composed of Orfila, Lecanu, and others, to inquire into the subject; but their answers have not at present been given.

The practice of burying in the centre of towns is one to which we have often before alluded, always expressing our unequivocal objection to it. Indeed, the impropriety of it is so plain, and the bad effects which result from it are so manifest, that it is needless to bring forward fresh arguments against it. No one pretends to advocate it, and the matter merely requires to be brought before the public eye in a sufficiently prominent manner. If it only obtain the attention which it deserves, an alteration must follow, when all are so unanimous in their opinion of its necessity, and of the advantages which would attend it.

We are not, however, to infer that



the interment of the dead in cities is the only violation of the laws of hygiene which requires correction in this country. A few evenings ago, as our readers are aware, a representation was made in the House of Commons with reference to the manner in which the poor are crowded together in many of our towns, and especially in London. To correct this evil is, perhaps, scarcely possible where population has become so numerous, and property of such high value. Nevertheless, it is well known that, by proper regulations, many of the ill consequences of dense population may be diminished; and it must be confessed that there is still ample room for improvement in the hygienic management of our towns. Many of the streets of London, and we may especially allude to the back streets in the neighbourhood of St. Luke's parish, are far from being models of cleanliness and perfection, and present spectacles which cannot fail to disgust even the casual observer. In spite of the high perfection to which the system of drainage has generally been carried in London, there still remain many parts in which it is sadly defective; gutters in the middle of the streets are, in some places, become the reservoirs of filth and putrid matter, which disseminate their noxious influence in the thickly-tenanted district around, and heaps of animal and vegetable matter are allowed to rot. We have no doubt that the gases which result from their decomposition must be highly instrumental in generating the low fevers so often prevalent in these parts of the metropolis.

Not long ago we had the pleasure of drawing a comparison between the health of the citizens of London and the inhabitants of several of the large continental towns, which was highly favourable to our own metropolis. But we must not, therefore, consider that

nothing more remains to be done. The good which has been already effected ought to be considered as a stimulus to further exertions; and whoever will take the trouble to examine into the subject, will find that there remains still abundant room for improvement. In a city which is professed to be a model of perfection with regard to cleanliness and drainage, such spectacles as our bye-lanes and alleys too frequently afford should no longer be suffered to continue; and we really hope that, the public attention having now, in one or two instances, been directed to the necessity of attending to these things, the ordinary rules of hygiene will be allowed to possess their due weight, and that many improvements will be effected, so that our cities may still farther heighten the rank they hold for cleanliness and salubrity.

#### MEDICAL REFORM.

*To the Editor of the Medical Gazette.*

SIR,

My last letter concluded with a promise to answer the question which I supposed might arise in some minds—"What are the advantages of combining the medical practitioner with the seller of drugs, over the system as at present existing in the Apothecaries' Company?" I would answer, that the plan I have proposed is only to meet extraordinary cases, is quite at the option of the general practitioner, and will, I presume, be but rarely adopted. The fault, as I consider, of the present system, as carried out by the Apothecaries' Company, is, that they force its members to combine a trade (for it is impossible to blink the question by adopting any other word) with a liberal profession. And let it not be answered that the apothecary, strictly speaking, only supplies the medicines which he prescribes, for the system of what is termed retail trade in medicines, &c. is carried on by a large number of apothecaries. What disgrace, what dishonour is it to a general practitioner, to eke out his living by keeping a shop of this kind? None whatever, as I conceive. But, then, as regards his social position, he must, if reasonable, expect to sacrifice this in some degree to the advantages he derives from the sale of medicines. I have known physicians

who were partners (dormant, I presume) in some branches of trade: but this was of their own free choice, and they have been content to sacrifice some portion of their professional dignity to their trade-earned wealth.

Again, if, as I have in part demonstrated, and hope still further to show, it is desirable the medical practitioner should not dispense and sell his own medicines, any plan which may tend to diminish this system will prove beneficial.

Having thus far sketched out my views of medical reform, it may be well to make a few general remarks upon the plan.

In all public situations no great difficulty can arise in restricting medical officers to the duties of their own particular province. The hospital physician can be readily restrained in his hospital practice from undertaking surgical operations, and such other duties as properly fall to the lot of the surgeon; and in like manner can the hospital surgeon be restrained from infringing upon the province of the physician.

In private practice such restrictions cannot be so easily enforced. I cannot, however, but think, that under such a system as I have proposed there would be much less confusion in this respect than at present exists; for the public would be better informed whom they might best entrust in their respective cases, and the profession being better and more simply arranged, young men would not become physicians or surgeons merely as the one or the other might be considered the most fashionable qualification of the day, but rather as his own taste might dictate, and as the one or the other might offer the fairest prospect of an honourable fame and income. The leading characteristic of the physician is, that he is a consulting practitioner—that he deals with all internal and constitutional maladies—with those local diseases which arise out of constitutional causes, and with those constitutional disturbances which arise out of local diseases or injuries—but that he is restricted from performing manual operations.

The leading characteristic of the surgeon is, that he deals with those diseases which require manual dexterity for their removal. Now it is evident that diseased action, which is constantly shifting its ground, may be, strictly speaking, the object of the physician's care to-day, and of the surgeon's to-morrow, or *vice versa*.

With so many points, therefore, in common between the physician and the surgeon, it would be impossible to lay down laws for their conduct in general practice which should prevent all confusion; though this might, perhaps, be diminished by establishing the rule that no person should be a

fellow of both colleges at the same time. Let him choose for himself which line of practice he would prefer, and if he aspire to the fellowship of the other college, it should be open to him by all means: thus, if a physician, he would become Fellow of the College of Physicians and Honorary Fellow of the College of Surgeons, or *vice versa* if a surgeon. Midwifery being chiefly a matter of manual skill, should be practised under the diploma of the College of Surgeons; this would not prevent the physician from rendering his assistance in those constitutional diseases attendant upon pregnancy and parturition. In like manner, the oculist, the aurist, and the dentist, should derive their qualifications from the College of Surgeons; the great feature of their occupations being surgical.

It might not be amiss if bleeders, cuppers, bandagers, &c. were to undergo some form of practical education and test of qualification, by examination at the College of Surgeons. These need not be admitted as members, excepting by their own choice, in which case they would of course have to produce the necessary qualifications, and pass the examinations required for such diploma.

I have given some reasons why, as it appears to me, it is not desirable that the practical occupation of the pure physician and the pure surgeon should be combined in one person. Those reasons related chiefly to the benefit of the profession itself, in the avoidance of that confusion which could not but be prejudicial alike to its members and the public. In as far as such a combination can be of public service, it is found in the office of the general practitioner.

It is not probable that a *Fellow* of the College of Physicians should wish to become also a *Member* of the College of Surgeons; nor should it be allowed. But there remains one other combination which would, I think, be highly beneficial;—I allude to the combined diploma of the *Fellow* of the College of Surgeons and *Member* of the College of Physicians. There is no lack of physicians to supply country towns, far less country hospitals; and although this may and does arise, in some degree, from the facility with which such distinctions have been obtained, yet it is more especially due to the vast preponderance of medical over surgical cases. The comparative rarity of pure surgical cases, a great number of which, in the form of accidents, occur to the labouring classes, renders it almost impossible for persons to subsist, in the country, upon their gains as pure surgeons. The surgeons of country towns and provincial hospitals are, therefore, with but few exceptions, general practitioners. It is my own good fortune to be acquainted with no small number of pro-

vincial hospital surgeons, who, for professional skill, would not come far behind the stars of the first magnitude in the great metropolis. The object, then, of my plan would be to confer upon them the highest honours of the College of Surgeons.

To prevent this combination of the Fellowship of the College of Surgeons with the Membership of the College of Physicians becoming abused and too common, it might be further enacted, that no lecturer on surgery, or surgeon to a hospital to which a school of medicine is attached, should be entitled to take advantage of the diploma of Member of the College of Physicians; or having previously obtained it, should resign it with its advantages. This would be no hardship, because any place which is sufficiently large to support a medical school, must offer a fairer prospect of pecuniary success to a pure surgeon than a smaller or less wealthy town; besides which, the distinction of being not only a Fellow of the College of Surgeons, but attached to a medical school, will deservedly give him claims upon public confidence which would otherwise have cost him much time and pains to acquire.

With regard to any restrictions to be laid upon the general practitioner, it will be found equally difficult here, as in other branches of the profession, entirely to prevent all clashing or confusion.

A general practitioner more talented or more popular than his neighbours, may wish to undertake consulting practice in medical cases, or to perform the great operations in surgery. It may be difficult, in private practice, altogether to avoid such occasional irregularities; but they may at least be readily and entirely avoided in all matters of public appointment. Nor let the general practitioner consider himself as ill used. He will be alike protected, as far as is practicable, from the inroads of the other branches of the profession. His condition, as regards public appointments, will be improved, and the path to the higher branches of medicine and surgery will be fairly and honourably laid open to him. He will only have to proceed to those branches of the profession, to become entitled to their honours and emoluments.

As respects the pharmacist, the restrictions to be placed upon him, in order to prevent his clashing with the other branches of the profession, have been already, in great measure, considered. There remains, however, one subject which I think merits consideration. It is now unfortunately but too common a practice for physicians and others to combine with chemists. I cannot imagine a practice more derogatory to the dignity of the profession than this, and, under any plan of reform, this system should be strictly prohibited.

In addition to those grand laws by which each branch of the medical profession should be kept within its own bounds, it would be highly desirable that a board should be elected, with the power of investigating all individual cases of breach of professional etiquette. Such board should consist of a proportionate number of *all* branches of the profession. They should have the power of publicly censuring, and even (under the sanction of a general meeting of the colleges) of suspending a guilty person from his professional station.

It is singular that in a profession so constituted no such tribunal has ever existed. In the army, the navy, the church, the law—besides the laws of the land, to which, in common with all subjects of the realm their members are amenable each member is also subject, under the power of punishment, to the peculiar laws and regulations of their profession.

I find that I have already trespassed too far upon your columns to enter upon any other point in my present letter, and must, therefore, beg to subscribe myself

Your obedient servant,

PHILOMATHES.

Aug. 1, 1842.

## HOSPITAL ATTENDANCE.

*To the Editor of the Medical Gazette.*

SIR,

THE following suggestions do not proceed from a lover of change and novelty, but from one whose predilections for walking in the old paths are unusually strong, and his reverential admiration of "the olden time" perhaps more than commonly great in these days of restless agitation. Thus much I premise, not in self-praise, but to conciliate, if I may, men of like opinion in these matters with myself, and obtain their unprejudiced consideration of my proposal on its merits. It cannot be denied, sir, that in the last two or three seasons at least (I might probably with truth state in the last six or seven) the classes of medical pupils in London have become less numerous than formerly; and several causes are assigned in explanation of the admitted fact—*e. g.* the smaller gross amount of entries to the study of the profession, and the establishment of provincial schools, &c. It is not unlikely that the latter is the more influential of the two: young men attend medical lectures, &c. &c. in their county town, and if they deem a visit to London at all desirable, seem (many of them, at least) to consider their making one an act of no inconsiderable condescension. Even this, I am disposed to believe, is often dispensed with, in favour of the more showy and fascinating attractions

of the French capital; and we have youth returning to their own country with mustachioed lip, single-breasted surtout, with collar of minimum size, and mouths full of the exploits of Lisfranc, Roux, and Guérin. Now, talented as these men undoubtedly, and celebrated as they justly, are, is it seemly and right that they should have that prominent place in the memories of Englishmen, which Brodie, Travers, Lawrence, Key, Tyrrel, Guthrie, and other British surgeons, can scarcely be thought to have forfeited? Yet the fault is not the young men's; they can witness the practice of the French cheaply—almost for nothing; but a man must be of large resources indeed who can afford to pay the fees for medical or surgical practice at more than one or two London hospitals: yet this he must do at present, if he desire to profit by, and form his own conclusions, from the varied practice of the eminent men just named. I, for example, have been educated at one of the Borough hospitals, have spent many years there, but never 24 hours in that on the opposite side of the street, nor at the Westminster twelve, nor at St. Bartholomew's six, nor at St. George's three, nor even at the London, Middlesex, and others, an hour; yet I have visited all, or nearly all, the Parisian. This is far from being an uncommon case; the reverse of it is indeed rare; but still it can scarcely admit of doubt that the young man whose education is nominally completed, and his examinations passed, would derive at least equal (I believe greater) advantages from the study of varying practice in London, than from the contrast he finds between that of his own and that of the French hospital.

Now, could the authorities but be induced to concur in the design, an arrangement might easily be made, whereby the well-conducted senior student would be invested with the invaluable privilege of witnessing, and profiting by, the treatment of disease which each physician or surgeon of eminence in London adopts; a privilege, too, which would be conferred without the least sacrifice on the part of the donors: but it must be by mutual and general consent.

The plan I propose is this:—A man, for example, enters as a pupil to the medical and surgical practice of St. Bartholomew's; he duly pays his fees; and having properly attended, and received a certificate to that effect, added to one of general good conduct; having probably, besides, obtained the diploma of the College of Physicians or Surgeons; let him then, by presenting these, with a commendatory letter signed by the Treasurer or Steward of St. Bartholomew's, be admitted to attend regularly the practice of Guy's, St. Thomas's, or St. George's, as the reputation of their medical and surgical officers, or other motives, might induce him

to desire. The privilege must, of course, be reciprocal, and liable to immediate suspension, or withdrawal, from any individual whose demeanour should be in any wise irregular, ungentlemanly, or obnoxious.

It is quite evident that, by an arrangement such as this, so far from the interests of any of the London hospitals suffering, they would be, in the aggregate, greatly promoted; for such advantages could at no provincial school be offered; while a great step would be taken towards the permanent establishment of just principles of treatment and their universal recognition; and, hearing less of the system of this or that teacher, we should see real science and art advanced by the more speedy and progressive development of truth.

I leave the suggestion, sir, in your hands, trusting that, if you think it feasible, and pregnant with those benefits to the senior as well as junior members of the profession, and (of consequence) to the community at large, which I am convinced, and have endeavoured to show, it promises, you will encourage, forward, and urge it by your influential pen. Two or three hospital physicians and surgeons, with a little public spirit and, energy especially if supported by the (I had almost said omnipotent) press, might effect this great, liberal, and surely unobjectionable measure, before the commencement of the ensuing session.

Your obedient servant,

F. F.

August 10th, 1842.

## FOREIGN BODIES IN THE RECTUM.

*To the Editor of the Medical Gazette.*

SIR,

WITHIN the last few months several cases have been recorded, and as many more referred to in the different medical journals, of articles of various kinds, such as pieces of wood, stones, &c. being thrust into the rectum, either accidentally or intentionally. On each occasion it would appear that the surgeon has experienced great difficulty in the extraction of the foreign body so lodged, in consequence of the violent contraction of the sphincter ani. Would it not be well at once, when any such difficulty presents itself, to spare the patient the pain and consequent irritation of the part attendant on the fruitless introduction of forceps, by dividing the sphincter with a bistoury, and thus to disable it? The operation is easy and simple, and done every day, both for the cure of fistula, and to admit of the cicatrization of troublesome ulceration of the sphincter that occasionally results from the removal of hæmorrhoids, or of other tumors of this part.

Your obedient servant,

E. D.

August 23, 1842.

DEVILLIERS AND CHAILLY ON  
AUSCULTATION IN PREGNANCY.

To determine the position of the maximum intensity of the double sounds of the foetal heart, we divide the abdomen into four parts by two lines crossing one another perpendicularly at the umbilicus, one falling from the extremity of the xiphoid cartilage to the symphysis pubes, the other running horizontally from side to side. In cranial presentations the sounds will be heard most intensely below, in presentations of the pelvic extremity above the transverse line; the precordial region being nearer to the head than the pelvis. It is very difficult to diagnose presentations of the trunk, inasmuch as the sounds being heard below the transverse line, they may be confounded with cranial positions. The maximum intensity of the sounds on the right or left of the perpendicular line indicates a right or left position of the head. The more distinctly the sounds are heard in the median line, the greater is the probability that the abdomen of the child is directed anteriorly. In the opposite position the sounds are heard more clearly in a lateral situation. But these signs, especially in the latter case, are very difficult, and we are often obliged to have recourse to other means to assist in the diagnosis. A table is added, according to which a correct diagnosis was formed by auscultation in 223, a false one in 68 cases of pregnancy. The large proportion of the latter was owing to the difficulty in determining the anterior or posterior, and right or left positions of the child.—*Revue Médicale*.

THE INDEPENDENCE OF THE  
FETAL CIRCULATION.

THERE is a memoir on this subject by Dr. Villeneuve, professor in the School of Medicine at Marseilles, which rather confirms the already received opinions on this subject than proposes any thing new. The conclusions he arrives at are chiefly these:—1. There is no anastomotic communication between the foetal and maternal circulation in the human being, as in the generality of quadrupeds. This absence of communication is proved by the existence of an elementary apparatus for circulation in the embryo, before the formation of the placenta; by the plethoric condition in which the foetus is often found in cases where the mother has suffered severely from uterine hæmorrhage, as in placenta prævia when the placenta has not been injured, and by the continuance of the placento-foetal cir-

ulation without hæmorrhage in an ovum expelled entire. 2. The death of the foetus is only due to the want of oxygenation of the blood, and may therefore be prevented by accelerating delivery. It is never due to anemia, except when the umbilical vessels of the placenta are torn. 3. The death of the mother may be occasioned by the separation of a small portion of the placenta, which proves it to be rather owing to venous than arterial hæmorrhage, inasmuch as the utero-placental veins have numerous communications with one another, both in the placenta and in the uterus, whereas the arteries present few if any anastomoses. 4. Ergot of rye is injurious both to mother and child in hæmorrhage from placenta prævia, because it determines the constriction of the uterus as much or more at the lower part than at the upper, without producing dilatation of the external orifice, and by the contractions which it excites it expels from the uterus the blood which the mother has need to preserve. 5. The plug, if employed at the proper period, is the best treatment for such cases. It determines more certainly than ergot the proper contraction of the uterus. If applied too late, it is ineffectual in controlling the hæmorrhage. 6. It is very bad practice to pass the hand through the placenta in the endeavour to effect the artificial delivery of the child. It is always easy to separate the placenta at the point from which the hæmorrhage proceeds. By the former method the death of the child is most decidedly accelerated, in consequence of the rupture of the umbilical vessels. 7. We may hope to find the child alive, even after the death of the mother, especially in cases where severe hæmorrhage has quickly proved fatal to her. Hence the obligation to practise the Cæsarean operation on women who die during labour.—*Gazette Médicale*.

## DISEASE OF THE NASAL FOSSÆ.

THIS is a case related by Dr. Münchmeyer, of Limeburg. A man, aged 71, suffered at the end of last winter from a severe cold, which subsided under proper treatment. On the 6th of April he was attacked with pain about the left side of the forehead, extending to the left side of the face and the left ear; it was very severe, and deprived him of rest. The left nostril was dry, but nothing abnormal could be seen in it. The left eye was pushed forward, and had an amaurotic appearance, but the sight remained. Various topical remedies to relieve congestion were employed, in spite of which the disease rapidly progressed. The pain increased, the eye was projected be-



neath the orbit, vision became impaired, and paralysis of the upper eyelid took place. At the same time a small firm swelling appeared at the inner canthus, and acquired the size of a pea. Several severe hæmorrhages occurred from the nose, which reduced the patient to an extreme degree of weakness, and he died May 17, without having experienced any cerebral symptoms.

On examination of the head, a pretty considerable layer of gelatinous substance was found upon the surface of the brain; but it does not seem clear that this had any connection with the other disease. In the left upper nasal cavities was found a growth, resembling in texture a fleshy, very firm polypus, which was situated beneath the crebriform plate and in the sinuses of the left æthmoid bone, being principally confined to this situation, but constituting also the projection at the inner canthus. The posterior æthmoidal cells and the sphenoidal sinuses were enlarged, and filled with a mass resembling in consistence and appearance thick pus. The mucous membrane lining these cavities was destroyed, and the inner surface of the bone carious to a considerable extent. There had been no escape of the matter towards the interior of the cranium, but it appeared to have gained a partial exit into the nostrils.

The author remarks that, although morbid growths in these cavities are by no means rare, such expansion of the sphenoidal sinuses with destruction of their sinuses are very seldom found. He states that he had been unable to find a similar case recorded in the works of several authors to which he has referred.—*Oppenheim's Zeitschrift für die gesammte Medicin.*

### CONVERSION OF NERVES INTO FAT.

THE body of a male subject, aged 30, was brought for dissection into the anatomical school at Marburg. The whole body was dropsical, and the left leg, from the foot to above the knee-joint, firmly swollen. On the dorsum of the foot were ulcers, from which sinuses could be traced into the tarsal joint. Dissection showed the cellular tissue of the limb infiltrated with plastic lymph, which in the neighbourhood of the ankle had a fatty, and higher up in the limb a fibrous appearance. On account of the carious condition of the joint, as well as the firm nature of this deposit, which was situated between the skin and fascia, and also, beneath the latter, between the muscles, the movements of the lower part of the limb had evidently been suspended for a considerable time. The muscles were pale and flabby, but in other respects not altered in

structure. The larger trunks of the nerves in the upper part of the limb were quite normal, but as they approached the affected part they became thickened, and appeared as if composed of mere fat. Portions of the saphenus, and other large branches of the ischiatic, so far as they could be separated from the degenerated mass, with which their sheaths became more and more amalgamated the lower they were traced, were dissected and examined under the microscope; when it was found that an extraordinary quantity of fat had been deposited within the sheath and between the fibres of the nerve, which increased in irregular gradations as it was traced downwards, till it constituted the whole structure of the nerve. The fat globules appeared to be arranged concentrically on the inner surface of the sheath, and by a stronger magnifying power the primitive fibres could, at the upper part, be distinctly seen running in the centre of the fatty deposit. They gradually disappeared lower down, till at length no trace of them could be found, the fat globules having entirely taken the place of the primitive nervous fibres.—*Müller's Archiv.*

### ON A PECULIAR INFLAMMATORY AFFECTION OF THE CORNEA IN NURSES.

BY PROFESSOR NASSE.

A MALIGNANT form of keratitis or inflammation of the cornea occasionally accompanies puerperal attacks, and in general terminates fatally. This affection, however, is not of a malignant nature, and appears at any time during the whole period of nursing, from a month after delivery to a year and a half, if the child be suckled so long. The eye is felt irritable, and the conjunctiva is seen injected with blood. Occasionally the catarrhal symptoms attend the complaint, at other times little vesicles appear over the surface of the conjunctiva. Sometimes rheumatic symptoms are present; at other times it comes on with a vesicular cutaneous eruption over the face. The conjunctival inflammation rapidly passes to the cornea, and is accompanied by the usual darting pains in the eye and margin of the orbit. From the third to the eighth day an abscess forms within the layers of the cornea, when the inflammatory symptoms diminish, and, if nothing be done to put an end to the complaint, it bursts into the anterior chamber, and occasions hypopion.

The disease is not peculiar to any age, constitution, or season; but is in every

case preceded by great lassitude, debility, and leanness, brought on by excessive lactation; in fact, seems to be a disease of debility. Blood-letting is consequently never indicated, but blisters behind the ears, diaphoretics combined with bitter infusions, quinine and sulphuric acid, a tonic diet, and above all the giving up suckling the child, generally effect a cure in about three weeks. It is mentioned that the separation of the child is the most important part of the treatment; and cases are related where the child being allowed to suckle before the cure was completed, brought it back with increased severity, and could not be stopped till the child was again removed, when the disease rapidly gave way.—*Ammon's Monatschrift für Medicin*; and *Edinburgh Medical and Surgical Journal*.

## OBSERVATIONS

ON THE

## SALIVA AND OTHER LIQUIDS IN THE MOUTH.

By SIGNOR BOUDET.

IN a paper on this subject, the author, Signor Boudet, confirms the opinion of the alkalinity of the saliva, having found it to possess this reaction both morning and evening, as well during a period of fasting as when food had been introduced into the mouth. The same reaction was shown when the test paper was applied to the arch of the palate, to the mucous membrane of the cheek, gums, and lower lip, these parts having been carefully wiped, and a small quantity of mucus allowed to collect on them without the contact of saliva. The posterior surface of the upper lip was the only part which gave an acid reaction. From his experiments the author infers that the glands of the upper lip are the only parts which furnish an acid secretion in the mouth, and imagines this to be the cause of the decay so frequently observed in the incisor teeth of the upper jaw as compared with those of the lower. The acid secretion flowing directly upon these teeth, and not being sufficiently neutralized by the alkaline saliva, which washes this part in less quantity than any other portion of the mouth, corrodes them by decomposing their phosphate of lime, and induces early decay. He therefore recommends the use of an alkaline powder in cleansing the teeth, which is to be especially applied to the incisors of the upper jaw.—*Dai giornali Scientifici, et Il Filocamo giornale Medico-scientifico*.

## CASE OF HYSTERICAL AFFECTION OF THE EYES,

WITH OBSTINATE CLOSURE OF THE LIDS.

ABOUT ten years ago, a lady, now 27, active and healthy, was attacked, the morning following a party, with intolerance of light, pain and watering of the eyes, and then complete closure of the lids, but without spasmodic action or distortion of any kind. She was unable to open her eyelids herself, and no force which could be employed sufficed to do so, until she was bled to 3vij. when they opened spontaneously; but in 48 hours they closed anew, to be again opened by the same means. During two years and a half the attacks occurred at irregular intervals, especially in the right eye, which never remained for more than a week unaffected; and during this period, besides venesection and arteriotomy, acupuncture of the lids, electricity, and the moxa to the vertex, were employed with success. When the eyelids were soon opened, the conjunctiva appeared natural; but when the opening was delayed, this membrane appeared flocculent and granular, and discharged a wheyish, purulent fluid. Almost every medicine in use, alteratives, tonics, antispasmodics, narcotics, have been tried, along with sea-bathing and voyages and travelling; and almost all the medical men in Dublin, and several in London, have been consulted without the slightest benefit. It should have been stated that vision was perfect from the first, and still is so. The lady's circumstances are now less comfortable than formerly, and her habits more sedentary. Yet her health is good, though acupuncture does not now, as formerly, relieve. The attacks are, however, more rare.—*Dr. Peebles, Dublin Med. Press*; and *Brit. and For. Med. Rev.*

## UNIVERSITY OF LONDON.

## CANDIDATES WHO HAVE PASSED THE FIRST EXAMINATION.

August 1842.

(The names are arranged alphabetically.)

## First Division.

	Medical Schools.
Bell, Hugh .....	Guy's Hospital.
Brown, Frederick James ..	University College.
Browne, Henry .....	King's College.
Browne, Joseph Hullett....	Guy's Hospital.
Edwards, William Thomas .	University College.
Ellison, James .....	{ St. Bartholomew's Hospital.
Haines, Robert .....	St. Thomas's.
Harling, Robert Dawson ..	University College.
Marshall, Frederick William	University College.
Parvey, William Henry ....	King's College.
Pennell, John Wilson Croker	Guy's Hospital.
Russell, James .....	King's College.
Spitta, Robert John .....	St. George's Hosp.
Taylor, Henry Sharp .....	University College.

Tudor, Richard..... University College.  
Ward, Stephen Henry..... London Hospital.  
Webb, Henry March ..... Guy's Hospital.

Second Division.

Cannon, Henry..... King's College.  
Crutch, George..... St. George's Hosp.  
Field, Frederick..... } Birmingham Roy.  
                                  } Sch. of Medicine.  
Forster, John Cooper ..... Guy's Hospital.  
Humphreys, Thomas ..... University College.  
Manson, Frederick Robert.. King's College.  
Routh, Charles Henry Felix University College.  
Timms, Godwin William .. University College.

EXAMINATION FOR HONOURS.

(The names are arranged in the order of proficiency.)

Anatomy and Physiology.

Harling, Robert Dawson (Ex- } University College.  
hibition and Gold Medal). }  
Edwards, William Thomas } University College.  
(Gold Medal)..... }  
Brown, Frederick James .. University College.  
Parsey, William Henry .... King's College.  
Webb, Henry March ..... Guy's Hospital.  
Marshall, Frederick William University College.

Chemistry.

Haines, Robert (Exhibition } St. Thomas's Hosp.  
and Gold Medal)..... }  
Edwards, William Thomas.. University College.  
Parsey, William Henry .... King's College.  
Marshall, Frederick William University College.

Materia Medica and Pharmaceutical Chemistry.

Webb, Henry March (Exhibition and Gold Medal). } Guy's Hospital.  
Edwards, William Thomas } University College.  
(Gold Medal)..... }  
Marshall, Frederick William University College.  
Haines, Robert..... St. Thomas's Hosp.

EDINBURGH UNIVERSITY.

DR. HOME has resigned the Professorship of Practical Medicine, and been succeeded by Dr. Alison, who, consequently, vacates the chair he held—that devoted to Theory or the Institutes of Physic. Dr. Home for many years held the latter Professorship; and his successor in either chair is to relinquish £150, so as to make up a retiring allowance of £300 per annum.

Dr. John Thomson has also resigned his chair—that of Pathology; and Dr. Henderson has been elected his successor.

ROYAL COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS.

Friday, August 19, 1842.

M. Young.—R. Colgate.—G. W. Trenery.—  
J. L. W. Dixon.—J. Laffan.—J. Ellam.—A. C.  
Tupper.—M. W. Eager.—W. J. Macdougall.—  
G. Dimock.

Monday, August 22, 1842.

F. M. Russell.—H. Daniels.—T. Lithgoe.—E.  
Hall.—A. C. Barker.—J. S. Alger.—J. M'Kee.—  
W. Wills.—C. A. Brew.—J. J. Davies.

A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, August 13, 1842.

Small Pox .....	10
Measles .....	18
Scarlatina .....	19
Whooping Cough .....	14
Croup .....	10
Thrush .....	10
Diarrhoea .....	48
Dysentery .....	5
Cholera .....	8
Influenza.....	0
Typhus .....	18
Erysipelas .....	3
Syphilis .....	0
Hydrophobia.....	0
Diseases of the Brain, Nerves, and Senses..	172
Diseases of the Lungs and other Organs of Respiration .....	217
Diseases of the Heart and Blood-vessels....	14
Diseases of the Stomach, Liver, and other Organs of Digestion .....	96
Diseases of the Kidneys, &c.....	4
Childbed .....	0
Ovarian Dropsy .....	2
Disease of Uterus, &c. ....	2
Rheumatism .....	3
Diseases of Joints, &c. ....	1
Ulcer .....	0
Fistula .....	1
Diseases of Skin, &c. ....	191
Diseases of Uncertain Seat .....	53
Old Age or Natural Decay.....	18
Deaths by Violence, Privation, or Intemperance .....	4
Causes not specified .....	874

Deaths from all Causes .....

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

August.	THERMOMETER.	BAROMETRE.
Wednesday 10	from 55 to 84	29.78 to 29.64
Thursday . 11	58 68	29.81 30.09
Friday . . 12	59 73	30.20 30.26
Saturday . 13	56 74	30.33 30.37
Sunday . . 14	56 78	30.37 30.30
Monday . . 15	54 80	30.20 30.14
Tuesday . 16	53 80	30.14 30.16

August.	from	to	from	to
Wednesday 17	58 to 79		30.11 to 30.03	
Thursday . 18	58 83		29.95 29.92	
Friday . . 19	63 73		29.92 29.76	
Saturday . 20	60 69		29.94 29.96	
Sunday . . 21	58 71		29.95 29.94	
Monday . . 22	53 76		29.92 29.93	
Tuesday . . 23	59 76		29.88 29.90	

Wind, S. by E. during the 10th, until the evening, when, during the storm, very variable. The 11th and two following days, S. by W. The 14th and three following days, E. and N.E. The 15th variable. The 19th, 20th, and 21st, S.W. and S. The 22d and morning of the 23d, N.E., afterwards S. by W.

Except the evening of the 10th, when a storm of thunder and lightning, accompanied by heavy rain, passed over, and during the afternoon of the 19th, which was showery, generally clear. Rain fallen, .19 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE  
LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, SEPTEMBER 2, 1842.

LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Small-pox, continued. Inoculation. Vaccination. Their comparative advantages. Treatment of small-pox.*

IN the last lecture I brought before you, in a rapid sketch, the ordinary course, and the essential symptoms of small-pox; both in its distinct and in its confluent form. I have yet to mention some other circumstances that are very frequently to be noticed in connexion with that disease.

Both kinds are accompanied by *sore throat*; the tonsils and fauces are tumid and red: and with this sore throat there is associated, about the period when the face swells, sometimes in the discrete variety, and almost always in the confluent, more or less *salivation*, which lasts for several days. At first the discharge is thin and plentiful; but, towards the period of maturation, it often becomes viscid and ropy, and is with difficulty got rid of by the patient. This salivation is of some importance as a *prognostic* symptom. If it ceases abruptly, and especially if at the same time the swelling of the face suddenly and prematurely subsides, the peril is great. Besides this, Sydenham regarded the ptyalism as a *diagnostic* circumstance; as a mark which identified with true small-pox a fever called by him the variolous fever, the *variola sine variolis* of De Haen and others. "The resemblance (says he) which this fever bore, in its symptoms, to small-pox, induced me to give it the title of variolous fever, which seemed indeed so much the more appropriate, as the fever raged at the same time with small-pox, and got well under the same treatment.

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The two diseases belonged evidently to one family, and there was no difference between them, saving that in small-pox the morbid matter was directed towards the skin, in the shape of an eruption; while in the variolous fever this matter was expelled from the system by the salivary glands." Notwithstanding this statement, it is difficult to believe that any such disorder as *variola sine variolis* ever proceeds from the contagion of small-pox.

This affection of the salivary glands does not so often occur in children; but diarrhoea appears sometimes to take its place.

The soreness of the fauces often depends, in great measure, upon pustules there situate. You may see that the tongue, the roof of the mouth, the inside of the cheeks, the uvula, and the velum palati, are thickly studded with them. It is affirmed by some writers that the pustules of small-pox occur in various internal parts of the body, and especially upon the mucous membrane of the intestinal canal. I believe this to be a mistake. The enlarged solitary follicles often put on very much the appearance of pustules. Cotunnus, who has written a good book *De sedibus variolarum*, asserts that pustules appear only upon the skin, and upon those parts of the mucous membranes which are freely exposed to the air. In one solitary instance he met with them in the trachea so low as its third ring. He fancied that previous desiccation of the part was necessary to their formation. He says that none appear on the cornea, while it is kept moist. He denies that they are seen in the interior of the body, or upon the foetus in utero: but in this last point he is certainly wrong: and this is a strong objection to his theory. The most striking facts which he alleges in support of his opinion of the necessary presence of air—besides the fact of the eruption being more copious on parts usually exposed to the atmosphere, as the face and hands—are, that pustules do not form on the inner surface of the eyelids, except in cases of *ectropium*;

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that they appear on hæmorrhoidal tumors only when these project beyond the margin of the anus; and that that portion alone of the glans penis is ever affected by them which is uncovered by the prepuce.

Dr. Gregory, however, states that true variolous pustules do not form upon the conjunctival membrane: and that the blindness of one or both eyes which is so common a result of small-pox, especially in children, is produced by an intense kind of ophthalmia, which sets in at the period of the secondary fever, and rapidly involves and spoils the transparent tissues of the organ.

During the period of maturation, a peculiar greasy, disagreeable odour, quite *sui generis*, proceeds from the body of the patient. If taken into the sick chamber blindfolded, one might name the disease at once by this smell. About the same time also many patients are tormented by itching of the surface; so that they are provoked to scratch off the heads of the pustules; and by so doing they often ensure the formation of pits. In many cases of confluent small-pox this itching appears to constitute the chief part of the patient's suffering.

There are various troublesome complications to which, in severe cases of the confluent form, the patients are liable during the secondary fever: erysipelatous inflammation involving the subcutaneous cellular tissue in various parts of the body, and leading to the formation of abscesses; glandular swellings in the groins and axillæ, going on sometimes to suppuration; sloughing sores on the hips and sacrum; phlebitis; and in two or three instances I have seen the large joints, after death, full of matter. One of the most serious symptoms, at this period of the disease, is dyspnoea. The air-passages, and especially the larynx, become clogged by viscid mucus, the arterialization of the blood is interfered with, and the patient is in danger of suffocation. Occasionally life is suddenly extinguished by oedema of the glottis, supervening upon that affection of the fauces which I mentioned just now.

In one most fearful phase of this always formidable disorder, symptoms indicative of what is called the putrid diathesis manifest themselves—petechiæ, vibices, hæmorrhages from various parts of the body. The pustules, instead of being plump and yellow, are flat, red, purple, or blue; that is, they contain blood, or a sanious ichor, in the place of pus, constituting the *variola nigræ* of Sydenham, the *bloody* small-pox of Mead. I believe that these appearances augur in all cases a fatal result. Hæmorrhage from the uterus is not uncommon; and in pregnant women abortion, and then, most commonly, death. Heberden says that he examined, in many instances, the foetuses so parted with, but never could perceive upon them any traces

of small-pox. His experience, therefore, agreed with that of Cotunnus; and we may conclude that infection of the foetus in utero is very rare. Yet, unquestionably, it sometimes happens; and the circumstances under which it has been noticed are various and interesting. In one instance, related by Mr. Flinders, the disorder was eight or ten days later in the foetus than in the mother. A woman, near her full time, took small-pox. The pustules were mature about the 10th or 11th of June. On the 18th she gave birth to a full-grown boy, upon whose face and body there were many pustules, discrete, and nearly ripe. The child died the same night. It is a very curious fact that the foetus has caught the disorder, doubtless through the medium of the mother, although she, having had it previously, was unaffected by the contagion. Dr. Mead relates that "a certain woman, who had formerly had the small-pox, and was now near her reckoning, attended her husband in this distemper. She went her full time, and was delivered of a dead child. It may be needless to add, that she did not catch it on this occasion; but the dead body of the infant was a horrid sight, being covered all over with pustules." In the first volume of the *Medico-Chirurgical Transactions*, Dr. Jenner gives an account of an infant which, upon the fifth day of its age, became indisposed, and on the seventh exhibited the eruption of small-pox; so that the contagion must have been communicated to it while yet in the womb. A few days before her confinement the mother of this child had seen, in the street, a person covered with small-pox pustules, the smell and sight of whose body had sensibly affected her. I see no reason, therefore, for doubting that the unborn being may pass safely through the disease while in the womb, and derive from that attack the customary immunity for the future. My namesake, Sir William Watson, describes, in the *Philosophical Transactions*, an instance in which the scars left by the pustules were visible upon an infant at its birth. This child was afterwards inoculated without taking the disease. Its mother, who had formerly had it, nursed, when far advanced in pregnancy, a servant ill of small-pox. Dr. Pearson met with a similar example. Mary Spooner was inoculated by him in her sixth month of utero-gestation, and had the disease severely. Her child was twice inoculated with small-pox matter, but without effect.

Like all these contagious exanthemata, small-pox has its periods of dormancy and of activity. Every now and then, at irregular intervals—and, as it would seem to our ignorance of the cause, capriciously—it overspreads a district or country as an epidemic. At this moment (1838) it is more prevalent in London, and in many parts of



England, than it has been known to be for many years past. When epidemic, it is also, in general, more than ordinarily severe; although different epidemics vary much in that respect.

There is no contagion so strong and sure as that of small-pox: none that operates at so great a distance. Dr. Haygarth states, "that during his long attention to this subject, not a single instance had occurred to prove that persons liable to the small-pox could associate in the same chamber with a patient in the distemper, without receiving the infection." It is readily communicable in every way; by inoculation, by breathing a contaminated atmosphere, by the contact or vicinity of fomites. Nay, it may be caught from the dead body. Mr. Cæsar Hawkins has recorded an interesting example of this. The body of a man, who died of small-pox, was brought into his dissecting room in Windmill Street; and four students took the disease from that source. Of these, one only had *touched* the body.

There is one appearance which I think curious, although perhaps it has not any great practical interest; and which I omitted to notice in the last lecture, when describing the course of the eruption. Without going minutely into the anatomy of the pustules, you may distinctly see, if you closely examine them when they are about five or six days old—you may see, at least, in many of them—two colours, viz. a central whitish disc of lymph, set in, or surrounded by, a circle of yellower puriform matter. In truth, there is, in the centre, a *vesicle*, which is distinct from the pus. You may puncture the vesicle, and empty it of its contents, without letting out any of the pus; or you may puncture the part containing the pus, and let *that* out, without evacuating the contents of the vesicle. The vesicles have even, by careful dissection, been taken out entire; and they are said to consist of several little cells. It is most probable that the lymph contained in this separate vesicle is the purest part of the variolous poison.

Before I say any thing of the measures to be adopted during the progress of small-pox, I have to bring under your notice two expedients of still greater interest and importance; the one of them contemplating a mitigation of the disorder, the other its total prevention. You anticipate that I am about to speak of *inoculated* small-pox in the first instance, and of the *vaccine disease* in the second.

I have many times stated, and all the world knows, that small-pox may be imparted to a healthy person by inserting beneath his cuticle a minute quantity of the matter taken from a variolous pustule. This, perhaps, is not very surprising; but it is surprising that the disease, so received, should be much milder than if it had been

contracted in what is called "the natural way," by breathing an atmosphere charged with the contagious poison. Why it should be so is difficult to conjecture. The fact is sometimes expressed by saying that the disease is milder when the virus is admitted through the cutaneous, than when through the mucous tissues. But I am not at all sure that the hypothesis involved in this proposition is true. No attempts have been made, that I know of, to introduce the poison artificially through a wound in any mucous surface. I should rather guess that the small quantity of the poison conveyed by inoculation into the blood may make the difference. But whatever the explanation, the fact is unquestionable, and obviously of the highest importance. By what accident it was first learned (for it evidently could not have been reasoned out) we do not know. The Chinese claim to have been in the habit, for many centuries, of *sowing* the disorder, by putting some of the crusts into the nostrils. But this is a different thing from inoculation, the surface being entire, and the effluvia from the crusts being drawn into the lungs by the act of inspiration. It is said that a true engrafting of the virus has been in use by the Brahmins in India time out of mind. It certainly was practised in Turkey at the very beginning of the last century, and perhaps somewhat earlier. In 1713, Dr. Emanuel Timoni, an Oxford graduate, who had settled at Constantinople, wrote to Dr. Woodward, in London, giving him an account of the new process, and testifying to its success. This account was communicated to the Royal Society, and published in its Transactions the following year. In 1715, Mr. Kennedy, an English surgeon who had travelled in Turkey, gave similar information to the English public in his *Essay on External Remedies*. And in the *Philosophical Transactions* for 1716 you may see a notice of the same process, as described by M. Pylarini, the Venetian consul at Smyrna. But these statements were neglected, or had no practical result. We owe the actual introduction of the practice of inoculation into Great Britain to the good sense and courage of an English lady, whose lively epistles have taken their permanent place in our country's literature. Lady Mary Wortley Montagu, the wife of our ambassador at the Ottoman Court, writes thus, from Adrianople, in the year 1718. "The small-pox, so fatal and so general amongst us, is here entirely harmless by the invention of *engrafting*, which is the term they give it. Every year thousands undergo the operation; and the French ambassador says, pleasantly, that they take the small-pox here by way of diversion, as they take the waters in other countries. There is no example of any one who has died in it; and you may

believe I am well satisfied of the safety of this experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England." In fact, she recommended it by her own example. The first person inoculated with the small-pox in England was her daughter. Then a child of a physician, Dr. Keith, who had visited Miss Wortley; afterwards some condemned felons, who were pardoned on condition of their submitting to the experiment; and at length, some of the royal family. But the practice was not thoroughly established, nor properly appreciated, by the English public, until the middle of that century.

Its efficacy in mitigating the severity and danger of the disease, in saving life and preventing deformity, was signally great. The mortality in the natural small-pox was estimated at one in five. But Baron Dimsdale, a great inoculator, declared that not one in fifteen hundred died of the engrafted disease. Two brothers, named Sutton, who had introduced, or rather revived, a very improved method of treating the disorder, professed to have inoculated 20,000 persons, without fairly losing one. But these, doubtless, were exaggerated statements. Among 5964 individuals, inoculated at the Small-pox Hospital in 1797, 1798, and 1799, there were nine deaths; *i. e.* one in six hundred and sixty-two. We may take Dr. Gregory's estimate of one death in five hundred cases, as being probably within the mark.

In the inoculated disease the period of incubation is comparatively short; the pustules are seldom numerous, and still more seldom confluent; and the secondary fever is generally slight or wanting.

I may mention here, also, that the eruption is not unfrequently preceded by a rash, something like that of scarlet fever, and called by Willan the *roseola variolosa*. It fades in the course of a day or two, and then the small-pox pustules are seen emerging just in the same state that they would have been in at the same period if no such rash had appeared. The efflorescence happens oftener in the inoculated than in the casual disease. In the former it is looked upon as rather a favourable sign; in the latter, especially if the rash be of a dark red colour, it is considered unfavourable, and as the herald of a severe confluent disorder.

A far superior expedient has since been discovered, in the practice of *vaccination*, which has rendered the inoculation of small-pox not merely unnecessary, but, in most cases, perfectly unjustifiable. Yet circumstances do sometimes arise, even now, in which it may be allowable and right to engraft the matter of small-pox; as when an unprotected person is unavoidably exposed, or has recently been exposed, to the

contagion of that disease, and there is no vaccine matter at hand. The advantage of inoculating in such a case is, that the inoculated and milder form gets the start of the natural and severer; the fever commencing sooner than it would otherwise do. To show you the value of the practice in such cases, and the degree of protection which it affords to individuals whom we cannot vaccinate, I may mention a fact which Professor Gregory, of Edinburgh, was in the habit of relating, and which was told him by a naval surgeon. The small-pox was introduced among the crew of a man-of-war, in a tropical climate, where no vaccine matter was to be procured. The men were almost all unprotected. Sixteen of them took the disease in the natural way; and of these, nine, or more than one-half, died. Of 363 who were inoculated, under the disadvantages of a hot climate, and no preparation, not one perished.

That a disorder communicated to the human animal from one of the brutes should protect the former against the contagion of small-pox, is one of the most interesting facts in the whole history of medicine. How glimpses of a truth so remarkable were first revealed to the casual observation of certain peasants, and how the result of this chance observation was gradually "matured into a rational and scientific form by a mind deeply imbued with the best principles of sound philosophy," I have not leisure to tell you in detail. And it is the less necessary that I should do so, as you may find the whole subject thoroughly narrated and discussed by Dr. Baron, in his interesting biography of Edward Jenner.

Dr. Jenner found among the great dairy farms in Gloucestershire a popular belief that no person who had had the *cow-pox* (an eruptive vesicular complaint communicated from the udder of the cow to the hands of the milkers) could "take the small-pox." Satisfied, by inoculating with small-pox matter several individuals who had had the vaccine eruption, that this was not an unfounded notion, he at length conceived the great and happy idea of propagating the cow-pox from one human being to another, and so preventing, in all cases, the perilous distemper of small-pox, which he hoped might thus be finally expelled from the earth.

By degrees, Dr. Jenner ascertained that some persons, who had had sore hands from milking, were not thereby rendered proof against the contagion of small-pox; but this difficulty was soon cleared up by the discovery that the teats of cows were liable to different kinds of eruption, and he learned, by close observation, which of these was the peculiar eruption that produced in the human frame the protecting disorder.

Dr. Jenner set himself to trace, if possi-

ble, the origin of the disease of the cow. First, he found that it was peculiar to certain dairies; then, that in those dairies *men* were employed in milking. Following up this clue, he farther made out that those men had also the charge of the farm-horses. Next, he learned that the teats of the cows generally began to exhibit the specific eruption at that time of the year when a complaint called "the grease" chiefly prevailed among the horses. Hence he concluded, that the malady was conveyed to the cows by the hands of the men who had been dressing the heels of horses affected with the grease. Subsequent inquiries have, however, shewn that this conclusion was not strictly correct.

Another difficulty which lay in Dr. Jenner's way, and which his patience and sagacity surmounted, was this. He found that some who were casually infected from the true complaint in the cow were not protected. This depended, as he afterwards ascertained, upon the period of the disease in the cow at which the virus was communicated to the milker. The thick matter proceeding from the vesicle late in its progress produced indeed a severer local sore than the thinner matter of its earlier state, but it did not confer the desired protection. The same thing is observed in respect to small-pox. If the matter used for inoculating be taken from a fully matured pustule, it does not so surely excite the disease as when taken from a more crude one.

The next important step in this most interesting investigation was to determine whether the vaccine disease could be transmitted, by engrafting, from one human being to another, and whether, if so transmitted, it retained its protecting power. The 14th of May, 1796, was the birthday of vaccination. On that day, "matter was taken from the hand of Sarah Nelmes, who had been infected by her master's cows, and inserted by two superficial incisions into the arms of James Phipps, a healthy boy of about eight years old. He went through the disease apparently in a regular and satisfactory manner; but the most agitating part of the trial still remained to be performed. It was needful to ascertain whether he was secure from the contagion of small-pox. This point, so full of anxiety to Dr. Jenner, was fairly put to issue on the 1st of the following July. Variolous matter, immediately taken from a pustule, was carefully inserted by several incisions—but no disease followed."

It is scarcely necessary for me to notice the objections which were made to the practice of vaccination. Some of them were merely foolish—as, that it was unnatural and impious to engraft the diseases of a brute

upon a Christian. Others were untrue—as, that it introduced into the system new disorders, distinct from the cow-pox. It triumphed over all these cavils; and in six years from its first promulgation the discovery was known in every region of the world.

It was soon found, however, that some, who had apparently had the cow-pox by inoculation, were nevertheless not incapable of taking the small-pox; and that these failures were, many of them at least, attributable to the mistakes that were made in the time or manner of performing the operation. It became necessary, therefore, to ascertain precisely the conditions requisite for the production of the genuine disease. And these conditions have been successfully investigated by Dr. Jenner and by subsequent observers.

You will learn to recognize the true vaccine vesicle only by repeatedly examining it for yourselves. Yet a brief description of its characters and progressive changes may be useful to you.

On the second or third day after the insertion of the vaccine matter into the arm, the punctures look red and inflamed, and on the fourth or fifth day the vesicle becomes perceptible; a pearl-coloured elevation of the cuticle enclosing a minute quantity of a thin transparent liquid. It gradually increases in magnitude till the eighth day, when it should measure from a quarter to half an inch across. Like the pustule of small-pox, it is more prominent at its circumference than at its centre, and it consists of small cells, from ten to fourteen in number. By puncturing carefully one of these cells, a drop of the virus may be let out, the other cells remaining full. Up to the seventh, or eighth, or even to the beginning of the ninth day, the inflammation around the vesicle should extend to only a very small distance from it. After this, it spreads, and what is called the *areola* is formed; a circular red border, which continues to increase during the ninth and tenth days, and begins to fade on the eleventh, passing through shades of blue as it declines, and leaving a degree of hardness behind for two or three days more. By this time, a brown or mahogany-coloured crust has formed over the vesicle, of a nearly circular shape; this becomes gradually harder and darker, and finally detaches itself about the 20th day. The cicatrix which it leaves should be somewhat less than half an inch broad, circular, slightly depressed, marked by radiating lines, and dotted with little pits which seem to correspond to the cells of the vesicle.

About the eighth day there is usually some slight febrile excitement manifested, which soon subsides. This is analogous to the secondary fever of small-pox: and it

seems to furnish the condition of the desired protection.

Of course it is of much moment to determine whether the cow-pox has run its proper course or not; and it is not always easy to say how far the progress of the vesicle may deviate from that which has just been described, without failing of its protecting influence. A very ingenious *test* of this, free from all ambiguity, has been devised by Mr. Bryce. His plan is this. He vaccinates the other arm, or some other part of the body, four or five days after the first vaccination. If the constitution has been properly affected by the first operation, the inflammation of the second vesicle will proceed so much more rapidly than usual, that it will be at its height, and will decline and disappear, as early as that of the first: only the vesicle and its areola will be smaller. In fact, from the time of the formation of the areola, the second vesicle is an exact miniature of the first. If the system has not been duly influenced by the first vesicle, the second will run its own course, increasing up to its eighth day, and so on. Should this be the case, the second vesicle should be tested by a third.

We find the germ of this criterion in the early history of vaccination. Dr. Jenner vaccinated the children of his friend Mr. Hicks, the first *gentleman* who consented to adopt the practice. This Mr. Hicks became afterwards an expert vaccinator himself, and it was his custom, in a doubtful case, to perform a second vaccination a few days after the first: and he remarked that the second vesicle made "immense strides to overtake the first."

After some time it became apparent that Dr. Jenner's estimate of the protecting power of the vaccine disease had been set too high. He had hoped and believed, as others also had, that the cow-pox would in all cases prove a perfect and permanent protection against the small-pox; but those hopes have been disappointed. Doubtless complete protection is the rule; but—how thoroughly and regularly soever the vaccine malady may have proceeded—it is too certain that very many exceptions to this rule have taken place, and are daily taking place around us.

And this fact, which has become too glaring to be denied or explained away, has depreciated the value of the process of vaccination, in the public esteem, far more than, if rightly considered, it should have done. For it is a remarkable and most important truth that the disease which, in some duly vaccinated persons, follows exposure to the contagion of small-pox, is much milder and shorter even than the inoculated, and *a fortiori* than the natural small-pox. The

disorder thus occurring is, therefore, denominated the *varioloid* disease, or (more conveniently, in my opinion), the *modified small-pox*.

The constitutional symptoms of this modified disease are, in general, at the outset, and for several days, much the same with those of the regular small-pox. The eruptive fever is of equal length and intensity. There is frequently much headache, and sickness, and sometimes even delirium. The eruption begins about the third day: it is often copious, and sometimes confluent; and in the confluent cases the eruptive fever does not entirely subside as soon as the crop of pimples has come out.

It is in its subsequent progress that the complaint is modified: in respect both to the appearances presented by the skin, and to the constitutional symptoms.

Three distinct kinds of eruption have been observed—

1. The eruption sometimes approaches in its character and course very nearly to that of the ordinary small-pox. The pustules fill up, have the central depression, and ultimately crust over, and the face swells. But this course is performed in a shorter time than that of the ordinary disease, and the pustules are usually smaller. This is the severest and the least common form of the modified small-pox.

2. Sometimes the papulæ shew a little fluid on their tops only, but never fairly suppurate, nor break; but the vesicles dry up, and hard prominences, with livid bases and horny summits, remain.

3. There are other cases in which a great part of the eruption consists of red pimples, which soon become livid, but contain from first to last no fluid whatever.

In the majority of instances of modified small-pox, all these forms of eruption co-exist. Some of the papulæ go on to suppuration, others become crowned with a horny summit, and others never exhibit any fluid at all.

But the most important characteristic of the modified disease, is the total absence of secondary fever. The constitutional disturbance which, for the first week, may have been as severe as in the ordinary small-pox, generally subsides entirely when the eruption has reached its acme. The patient is convalescent just when, in the unchecked and regular form of the malady, his danger is beginning to be most urgent.

These two circumstances, then—the short duration of the eruption, and especially the absence of secondary fever—furnish the broad distinctions between the regular and the modified small-pox: and almost always, when vaccination has been thoroughly effected, and small-pox occurs afterwards, it



occurs in this modified form; and the modified form of small-pox is very seldom indeed fatal, though some instances of death resulting from it have certainly happened.

Several questions of the greatest practical moment and interest here present themselves: but it is impossible that I should discuss them. I will *state* some of them, however, that you may bear them in mind in your future opportunities of observation; especially as they are yet, for the most part, undecided questions; and questions which can be answered only after repeated and careful observation.

The first is, whether the protecting influence of cowpox upon the human frame diminishes by lapse of time, and at length wears out. There seems reason for suspecting that such may, sometimes at least, be the case. Certainly in many, but not in all, of those who have gone through the vaccine disease, revaccination at a distant period reproduces, in a greater or less degree, its primary effects. A friend of mine, who was vaccinated in 1799, has a son nine or ten years old, who was vaccinated at the age of three weeks. Both of them have lately been revaccinated. The boy was somewhat affected by the renewal of the operation; the father not at all. It yet remains to be determined whether all those who are susceptible of some impression from a second vaccination, are liable to be affected by the contagion of small-pox: and whether a repetition of the operation of engrafting the cow-pox, renews or adds to their security against small-pox. At any rate, the practice of revaccination is a safe and advisable precaution. Dr. Gregory says of it, "we have sufficient facts before us to state with confidence that it need never to be recommended prior to the tenth year of life; and that the age best fitted for it is from the period of puberty to that of confirmed manhood."

But, secondly, is there any ground for supposing that the wished-for protection ever fails to be conferred, because the operation is performed too early? It has been suspected that it is less likely to produce the requisite, or an enduring, effect upon the constitution when it is done while the child is at the breast. But most children are vaccinated within that period. We know that this is a time when they are but little susceptible of contagious disorders in general. If this suspicion be well founded, Dr. Gregory's first proposition requires correction.

A third question is, how far the frequent failure, in late years, of complete protection, can be ascribed to the circumstance that the vaccine virus has been repeatedly transmitted from one human being to another, and its supply thus kept up, without any fresh recurrence to the cow, the original

source of the disorder. Dr. Jenner was, himself, not without apprehension that this might prove a cause of failure. But the analogy of other animal poisons supplies no warrant for such a belief. For one year I had a seat, as the Senior Censor of the College of Physicians, at the National Vaccine Board, and I then had opportunities of satisfying myself that lymph which had been transmitted without interruption from person to person ever since the time of Jenner, continued to generate as perfect a cow-pox vesicle as at first. If, as Dr. Heim asserts, there are no less than five kinds of spurious cow-pox, all communicable by inoculation from the teats of the animal to the human body, I cannot help thinking that recourse should not be had rashly or needlessly to lymph recently obtained from the cow.

In the fourth place, there are yet moot points, respecting the number of vesicles, and the degree of constitutional disturbance, which are requisite to ensure, and to prolong, the protective power of vaccination. The constitutional effect will bear some proportion to the number of vesicles; and of these, it would seem, there should be several; and one or two of them, at least, should be suffered to pursue their entire course, untouched.

With regard to a fifth question, the most important of all, we may speak very decidedly; and it is a question concerning which it is of the utmost consequence that medical men should form, and disseminate among the public, correct opinions: I allude to the comparative merits and advantages of *inoculation with small-pox*, and *vaccination*.

The advantages of the practice of inoculation to the individual, supposing him doomed to have small-pox, were great and obvious; to the community at large they were very doubtful. It gave the undoomed individual, for certain, an ugly disease, which was comparatively free from danger, in exchange for the chance, on the one hand, of contracting a very hazardous form, and on the other, of escaping altogether from any form of variola. We need not enquire which is the most eligible branch of this alternative; we know which was by most men actually chosen. But the practice of inoculation, by carrying the virus and the disease into every district and village throughout the length and breadth of the land, filled the country with contagion; ensured the disease to all who were subjected to the operation; and diminished to all who were not the chances of escaping it. No doubt the distemper was produced artificially in many more persons than would have caught it naturally, had inoculation never been thought of. So that while the relative mortality, the per centage of deaths from small-pox, was lessened by this practice,



the absolute mortality was fearfully increased. Such at least is the judgment expressed by most who have thought and written on the subject. Dr. Heberden compared the number of deaths ascribed in the London bills of mortality to small-pox during the first thirty years of the last century, with the number during the same number of years at the close of the century, and he found that they had increased from 7·4 per cent. to 9·5 per cent. To be sure, some allowance must be made for the increase in the whole population of London during that interval; but, on the other hand, we must take into account the deaths (not noted in those bills) which followed the inoculation of small-pox in secluded villages, where, but for that practice, the poison might seldom have been found. It is right, I say, that this matter should be steadily contemplated, in all its lights, and with all its shadows, in order that the inestimable blessing conferred upon mankind by the researches of Dr. Jenner may be fairly set forth, and adequately appreciated. The vaccine virus produces a slight disorder, which is attended with no risk, and which (unluckily I may say) is not communicable except by direct engrafting. It not only does not disseminate a dangerous and deadly poison, but, if rightly used, it affords the means of eradicating from a well-regulated community, or at least of confining within narrow limits, the most loathsome pestilence which the world has known. Where vaccination is, the contagion of small-pox need never come. In Denmark, as I told you, variola had at one time disappeared, before the defensive influence of compelled vaccination: Chance, and a careless security, engendered by the absence of the pest, have led to its reintroduction there. It is much to be regretted that the boasted liberty of this country renders it almost impossible to enforce by law a practice which would be so conducive to the public weal. Some good might be done by enacting that no person should be eligible to even any parochial office of trust or profit who could not produce a certificate that he had been duly vaccinated. And the benefits which this safeguard confers on the individual are scarcely inferior to those which it is calculated to bestow upon society. It unfortunately does not give complete protection against small-pox to all, but it gives complete protection to many. And you must recollect that small-pox itself is not a universal and absolute assurance against its own return. But the cow-pox relieves all from the necessity, imposed by inoculation, of coming within the sphere of the variolous contagion. It renders many, I repeat, impregnable to that poison, if they do chance to be within its range; and its advantage to the comparative few who suffer the double misfortune of being

exposed to the contagion of small-pox, and of being affected by it, is this, that it gives safety, though not exemption; that it takes away the sting and peril of the variolous disease, by curtailing it of the secondary fever. At the very worst, it leaves the individual liable, by a twofold ill luck, to contract a form of small-pox very much less dangerous than that which he would voluntarily accept by submitting to the operation of inoculation.

It is difficult to adduce exact numerical statements in illustration of this reasoning; but I may quote two short series of facts as samples.

During an epidemic in Scotland, Dr. John Thomson saw, from June 1818 to December 1819, 556 cases. Of these 205 had previously had neither small-pox nor cow-pox, and 50 of them died; nearly 1 in 4. 41 took the small-pox for the second time, and Dr. Thomson knew of 30 other such cases, making 71 in all, whereof 3 died; or 1 in 23. 310 had been previously vaccinated, and among these there was but one death.

The population of Marseilles at the time of an epidemic there in 1828, was estimated at 40,000: that is to say, of 30,000 vaccinated, 2000 variolated, and 8000 unprotected. Among the 30,000 vaccinated, about 2000 were attacked with small-pox, and 20 perished; 1, namely, in 100. Of the 8000 unprotected, 4000 were attacked; and 1000, or 1 in every four, died. And out of the 200 variolated, 20 took the disease a second time, and 4 died; or 1 in 5.

There yet remains a highly interesting, but a less practical question. Dr. Jenner, as I stated before, believed that he had traced the cow-pox to its origin in the heels of the horse, affected with *the grease*. It has since been made out that the disease which, in the horse, corresponds with and produces the specific malady of the cow, is a vesicular eruption, having no necessary connexion with the grease, but extending sometimes all over the animal's body. Now the question is, whether these two distempers, occurring in the cow and in the horse, are identical in their essence and nature with the small-pox of man. If so (as Dr. Jenner believed, and Dr. Baron strongly maintains), a part of the mystery attending the whole subject vanishes. The protection furnished by the cow-pox resolves itself into the more familiar law, that certain diseases, engendered by animal poisons, happen to the same individual but once, and shield the body against their own recurrence. In conformity with this theory, Dr. Baron names the disorders respectively, *variola*, *variola vaccina*, and *variola equina*.

The notion, you see, is this, that the vaccine disease is in truth small-pox, rendered mild by passing through the system of the cow. The great object of inoculating

the small-pox is to produce a benignant form of that disease, by diminishing the number of pustules. The cow-pox diminishes the number to one; and while it reduces the severity of the disorder to a *minimum*, it absolutely takes away its power of propagating itself, except by a direct engrafting of the visible virus. The disease is not sufficiently intense to taint the air with poisonous effluvia. At the same time it affords (but less surely and less permanently) the customary protection. Such is the theory, which is intelligible and plausible, and supported by strong facts and persuasive reasoning; for all which I must needs refer you to Dr. Baron's book.

To avoid breaking the thread which connects the different parts of the main subject, I have postponed to the last what I have to say respecting the *treatment* of small-pox.

This, for a long time, was conducted upon an erroneous principle, and eminently disastrous. The older physicians attempted to force out, through the skin, the morbid matter existing in the blood. The eruption they considered to be the natural and only cure; and adopting the vulgar maxim, that "it was better out than in," they did all they could to promote a copious eruption, by a hot regimen, by covering the patient with bed clothes, by keeping the doors and windows jealously closed, and excluding every breath of fresh air, and sometimes by administering wine and cordials. The celebrated John of Gaddesden, the author of that curious book the *Rosa Anglica*, improved even upon this. He surrounded the half-suffocated patient with red curtains, red walls, red furniture of all kinds: every thing he saw was to be red; for in that colour there was, he pretended, a peculiar virtue. This John of Gaddesden, by the way, was a very sad knave, and the first Englishman, I believe, who had the luck to be made Court physician. He had one medicine so good as to be fit for the rich only; and he recommended a double dose for the wealthy. "Duplum sit, si pro divite." He flourished in the 14th century.

Sydenham was the first, in this country, to employ the opposite or cool regimen in small-pox: and although his prejudiced contemporaries refused to follow his example, and adopt his practice, he confidently predicted its final triumph—"obtinabit demum me vita functo."

But it was subsequently to the introduction of the method of inoculation that the cooling treatment was fairly established, by the Suttons—two brothers, one of whom, Robert, lived at Bury St. Edmunds; the other, Daniel, at Ingatestone, in Essex. These men, wiser in their generation than the regular physicians, had the good sense to pursue the same plan of general manage-

ment which had been so prosperous in the East, whence the practice of engrafting was originally imported. Daniel, in particular, became famous for his successful inoculations: and the great secret of his success seems to have consisted in his making one puncture only; exposing his patients much and often to a cool atmosphere; supplying them freely with refrigerant drinks; and restricting them to a spare diet. Under this course, Cullen, who adopted it from the Suttons, declares that ninety-nine times in the hundred inoculation imparts a distinct small-pox, and very generally of the mildest form.

Now the same principle applies to the casual disease when we have reason to suspect that it is impending, or have the opportunity of treating it at its commencement. The object is to prevent, if possible, a copious eruption; upon which, as we have seen, the severity and peril of the disorder entirely depend. It has been thought that venesection, by its antiphlogistic power, and, perhaps, by letting out, with the blood, some portion of the regenerated virus, might lessen the number of the forthcoming pustules. But you cannot ensure this effect by blood-letting: and you must bear in mind that, should the eruption prove confluent, suppuration, to a large amount, is inevitable, and—like that of an extensive burn—will require, in order to go on favourably, a certain degree of constitutional vigour.

You may abate the force of the eruptive fever, and keep down, it is believed, the number of pustules, by saline purgatives, so exhibited as to produce two or three loose stools every day, and by free ventilation of the surface of the body. The skin may even be sponged with tepid water, if its temperature be very high.

When the eruption is all come out, if the pimples on the face be very few and distinct, the danger is over, and there is no more to be done. At this period Cullen dissuades the further use of purgatives, as being sometimes hurtful.

But if the pimples on the face be many, and confluent, the patient will still require a great deal of attention. Our business is to look out for, and to meet, untoward symptoms.

About the eighth or ninth day, wakefulness, and restlessness, and sometimes tremors, are apt to come on; and the proper remedies for this set of symptoms, in small-pox as well as in continued fevers, are opiates. In variola, when given in full doses at bed-time, their good effects are often very conspicuous the next day.

If the maturation of the pustules should proceed tardily, if they should not fill up properly nor their contents become purulent, then strong broths may be of use, or even

wine. But the effects of these must be carefully watched, and their amount adjusted to the necessities of the case.

When the pustules are livid, and intermixed with petechiæ, and typhoid symptoms occur, the disorder generally proves fatal. In such cases it is customary to prescribe bark and acids, in addition to the wine and opiates.

The proper plan of managing the patient during the continuance of the secondary fever, is to keep his bowels moderately open by gentle laxatives, or by enemata; and to give opiates once or twice a day. These are the more necessary on account of the irritation of the skin. The cooling regimen must now be given up; and the strength must be supported by a nourishing diet. Wine and cordials are indicated if the pulse be feeble; but the swelling of the hands and wrists often makes it difficult to feel the pulse.

Various external applications have been tried, with the view of relieving the intolerable itching; which often induces the patients to scratch and tear their faces, and to ensure the formation of scars. Cold cream is used for this purpose; or a solution of common salt, applied luke warm; or a liniment composed of equal parts of olive oil and lime water. This may be smeared, from time to time, over the itching surface, by means of a soft camel's hair pencil.

The dyspnoea which sometimes comes on late in the disease, is a very ugly symptom. I know of nothing that can be done for it beyond blistering the throat and chest.

#### CLINICAL OBSERVATIONS

ON

#### DISEASES OF THE SKIN.

By BENJAMIN PHILLIPS, F.R.S.

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#### SCALP DISEASES.

*Eczema*.—We shall now proceed to consider the ordinary form of "scald head;" and probably the name has been derived from the scald-like appearance of the scalp in this particular affection, *eczema*. I have already shewn you that a very large proportion of the cases of scalp disease which come under our observation here, and I apprehend elsewhere, are cases of this species of *vesicular* disease.

In a large number of the cases of *eczema* of the scalp, the disease also extends to the face; and, in a large majority of such cases, the disease seems to be a consequence of the irritation of teething; it may be that of the first, or of the second dentition. The disease commences with the development of a

red patch, which is quickly covered by the characteristic vesicles of *eczema*. They are commonly irritated by scratching, so that a greater number of them pour out their contents over the neighbouring parts than are absorbed. This fluid, so effused, becomes concrete, so as to assume a yellowish semi-transparent gummy appearance, as is well seen in the cases before us. This concretion mats the hair so far as it extends. In many cases the eruption quickly spreads over most of the scalp, the ears, the forehead, and more or less of the face; these parts being more or less completely covered with this yellow concrete matter. In the boy before you it has affected not only those several parts, but also the back of the neck.

It is said the affection is more commonly seen among children with fair hair and light complexions than others. I find it occur very commonly also among those of dark complexion. It is very true that, during the first dentition, a large proportion of children are comparatively fair. In these cases the redness is often very intense, the integuments tumid, and the exudation from the whole surface most profuse. The itching is often so great, that a child cannot refrain from adding to the irritation by the use of the nails; and this state of things is much aggravated by frequent or constant exposure of the part. A poultice over the whole scalp is the only protection that can be afforded in that boy's case; if it were removed, and he left to himself, he would quickly tear the whole scalp till it bled. The irritation very commonly extends to the neighbouring glands; they become tumid, and often suppurate. There are two such cases before you to-day. In the case of the boy, the crusts are much thicker than those of the girl; this is owing to an admixture of *impetigo* with the original disease in his case, so as to give more the appearance of scabbing to the crust. You see the *impetigo* pustules on the forehead. This state of things may continue through the whole period of the first dentition; and, as I have already stated, if it be restrained within moderate limits, its influence is salutary; but if its characters be changed, so as to assume much acuteness, serious inconvenience is often the consequence. When, instead of the appearance I have attempted to describe, the crusts grow hard and brittle, almost pulverulent, the general health will most likely suffer; and in the case of the boy, where this state of things exists, there is, as you may perceive, a silly or fatuous appearance, which I believe to be owing, to a certain extent, to the state of the eruption; and which will, I have no doubt, yield when the irritation ceases, or when the scalp affection assumes a more active character.

**Diagnosis.**—It is not very easy, at least in the acute stage, to confuse eczema with any other disease, except occasionally impetigo. We cannot confound it with herpes, which is the only other vesicular disease of the scalp we are called upon to treat, for reasons already given; nor with any pustular disease, except when eczema has assumed the impetiginoid form; and even then, the vesicles, which you cannot fail to find, will soon inform you that the disease is not pustular. It is true you may get the scalp affected with eczema and impetigo at the same time, but they are generally distinct. It is in its chronic form, however, and more particularly when it presents the desquamating appearance, that eczema is most confounded with other affections of a scaly nature, such as pityriasis or psoriasis; this is the state to which Alibert applied the term "*dartre furfuracée*," and Bateman, I apprehend, "*porrigo furfurans*." In these cases I have only to recal your attention to the necessity for looking for the elementary lesion: if you find vesicles your diagnosis is clear; if you do not, the history of the case, or the occurrence of a certain exhalation from fissures, will help you to a proper conclusion.

The fact, that you have only to carry in your mind two vesicular affections, eczema and herpes; two pustular affections, impetigo and porrigo; and two squamous diseases, pityriasis and psoriasis, makes the study of scalp diseases, so considered, a tolerably simple matter, in so far as concerns diagnosis.

**Treatment.**—If prudently treated, the inflammation lessens, and in a few weeks—from three to six or eight—it disappears, leaving behind it only a certain tendency to desquamation; but if neglected, or improperly treated, the disease may assume a chronic form; the redness is then inconsiderable, the vessels irregularly developed, and a thickened, rough, desquamating surface is presented; this, as I have already stated, is, I presume, what constitutes the "*teigne furfuracée*" of Alibert, and probably the "*porrigo furfurans*" of Willan.

When eczema appears during the first dentition, no violent means are to be resorted to for its removal; but it is necessary to observe certain rules for restraining the irritation within prudent limits; if it be left to itself, this may not always be the case. At this period it is not often necessary to cut the hair; but if it be long enough to be, when matted, a source of irritation, it should be removed, as close to the scalp as convenient, with a scissors;—it is never proper to resort to the razor in this affection. It is proper to prevent the exudation from getting upon the cap, if worn, because it sticks to the part and increases the mis-

chief. This can be done by interposing a piece of oiled linen between the cap and the head; but it is better to have no cap at all. To allay the irritation at the part, a bread and water, or potato poultice, answers very well. In acute cases it should not be applied quite cold, because cold applications often develop ophthalmia. It soon brings away the crusts, soothes the inflamed integument, and is a protection against scratching. Every morning, or even morning and evening, it is well to wash the part with soap and water. If the irritation be great, the soap must be of the mildest kind; if it assume the chronic form, soft soap may be used with advantage. If the irritation be very great, it may become prudent to use mucilaginous and anodyne applications, such as decoction of mallows and poppy heads. These simple means will often be quite sufficient to impose a proper check upon the disease; and when the irritation ceases it may soon disappear; but there are cases where the acute symptoms will abate, and the disease will degenerate into a chronic and most obstinate form; but these are principally cases in which the disease is presented at a somewhat later period of life. Here we shall often have much exercise for patience and ingenuity; here we shall often find the most approved means fail, at the moment when they seem on the verge of curing the disease. In some cases decoction of dulcamara, in others the bichloride of mercury, in others Plummer's pill, in others acids or alkalies, may do well; but in very obstinate cases I have known the greatest amount of good to be derived from arsenic. In this form of disease local applications are often of great service. In young children, however, I do not often go beyond short hair, ablutions with soft or mild soap morning and evening; and after each ablution, if the redness be not intense, I apply upon the part sulphuret of potash lotion. In other cases, where there is still a cracking oozing surface, I find zinc ointment very useful. The torturing nitrate of silver system I decidedly abjure; I have seen very serious scalp mischief from it, and you saw the effects of it on the boy's cheek last week. But there still remains one thing to which I must direct your attention, and that is, the length of time which will often elapse, even when the disease is got the better of, before the scalp acquires a healthy appearance. A certain, though slight, redness may continue, and the desquamation may be considerable. These are cases in which ignorant persons continue to apply a variety of agents, under the idea that the disease is not got rid of, and subject the patient to very unnecessary discomfort and seclusion. Whenever we have dissipated the disease, the less we interfere with



the part the better ; we shall not expedite the return to a natural condition by officious meddling. Let the hair grow, let the parts be daily washed with mild soap, and let nature do the rest.

*Herpes*.—The occurrence of *herpes* of the scalp is unfrequent. I have known a case of *herpes zoster*, in which one limb of the band has stretched up, a certain distance, into the hairy scalp ; but it is an unfrequent occurrence ; so indeed is that of *herpes circinnatus*, whose more common seat is the face. *Herpes circinnatus* is presented in the form of a red patch, almost always round, sometimes oval ; the redness is much less vivid at the centre than the circumference of the patch, and if the patch be large, the skin at its centre may be of a natural colour. Soon the circumference is studded with a number of small vesicles : at first they are transparent, very soon the fluid they contain becomes turbid, and is absorbed ; or they burst, and are followed by thin scales, which are soon detached, and in ten days all that remains is a little redness at the point. A little itching and stinging are all that the patient complains of.

Now it is hardly possible to confound this disease with lepra, except at a particular moment—when the shrivelled vesicles present only a slight exfoliation upon a red surface ; but even then, the remains of some of the vesicles, and the absence of the raised ring of lepra, are sufficient to distinguish them. Further, when herpes is in this state it is near its cure. The confusion which the name ringworm and the annular arrangement have brought about, has tended to create some mistakes with respect to *porrigo scutulata* ; but the one disease is vesicular and only yields squamæ, its duration is short, it is not contagious, and it does not cause the hair to fall off. The other affection is pustular and contagious, of long uncertain duration, causing scabs, which increase in thickness, and the hair falls off in those parts which the disease has affected, and you have means enough of distinguishing between herpes and porrigo.

Little need be done in the treatment of this disease : left to itself it will probably get well as soon as by any effort of art ; certainly the *ectrotic* plan retards the cure. The same simple means already indicated for the treatment of slight cases of herpes may be employed here, but alkaline lotions will often be found beneficial in allaying itching and stinging ; so will an old woman's remedy, rubbing the point with a little saliva. Bateman recommended astringent lotions, but cold water has the same effect in lessening the itching. Such are the simple means to be employed in the treatment of this comparatively simple disease.

*Impetigo*.—We must next consider an

affection of a peculiar nature, very common during the earlier years of life, *impetigo*. You will recollect that, in speaking of *impetigo* generally, we alluded to several varieties, of which the *impetigo figurata* was the most important. You will recollect, also, that we found the elementary lesion to be the same in all ; but when these affections occur in the scalp, they undergo a certain modification, partly, no doubt, owing to the structure of the part in which the disease is developed. *Impetigo figurata*, in the form it presents elsewhere, is not commonly seen in the scalp ; neither is the *impetigo sparsa*, though similar affections slightly modified are : and here we enter upon the confusion which has been introduced into the study of scalp diseases. Two forms of *impetigo* are common to the scalp, the *impetigo larvalis* and the *impetigo granulata*. I take it that *impetigo granulata* is the affection described by Alibert as *tinea granulata*, by Bateman as *porrigo granulata* ; though Rayer seems to incline to the opinion that his description of *porrigo favosa* corresponds more nearly with this variety. The *impetigo larvalis* is the *crusta lactea* of some authors, *teigne muqueuse* of others, and corresponds nearly enough with the *impetigo figurata* of other parts. I must detain you a few minutes to endeavour to make *impetigo* as simple as possible ; and this I shall do by getting rid of all varieties, and considering *impetigo* as a single affection. Willan and Bateman conceived there was something particular in the small pustules of their *porrigo larvalis*, and they called them *achores*, an expression the value of which is not well understood. The fact is, I do not believe it is possible to establish a satisfactory distinction between what they termed *pydraceous*, and other small pustules of the scalp ; there are only two pustules for us to make out, the one well marked, the *impetigo* one—the ordinary one, the other more doubtful, the *favus*.

The affection I wish first to bring before you is the *porrigo granulata* of Willan, which I persist in regarding as identical with the *impetigo sparsa* of other parts ; the *porrigo larvalis* I persist in regarding as the *impetigo figurata* of other parts ; so that we have two varieties of *impetigo* of the scalp, representing the *impetigo figurata* and *impetigo sparsa* of other regions.

*Impetigo larvalis* is presented in the form of whitish yellow, acuminate, and more or less clustered pustules, which, either spontaneously or from scratching, because the itching is great, open, and allow of the escape of a thick, gummy, yellowish fluid, by which the surrounding hair is matted, and yellowish or brownish scabs are thus produced. The exudation continues, the scabs are thickened, and if they fall off they are reproduced. A continual oozing is thus kept up, and the



child, by scratching, increases it, and sometimes occasions excoriations. If this disease affects a large part of the scalp, and in the case before you it does so, the pain and itching are often very severe, pediculi are often developed in large quantities, and greatly increase the irritation and exhalation. The scabs may become friable and break into pieces, the fragments adhering to the roots of the hair; and from the hair being matted together it is difficult to detach them. The want of cleanliness gives greater intensity to the symptoms; a very fetid smell is exhaled, and the glands of the neck are often enlarged. All these circumstances are well shown in the case before us; and between this and next week the only application which shall be made to it is a poultice, and you will be able to judge of its effects. The eruption may extend to the face and the back of the neck, and considerably increase the evil. The hair falls off if the scabs have long remained adherent, but new hair is developed soon, because the bulbs were not destroyed, but only inflamed. If, however, the scabs are removed early, by emollient or alkaline applications, we discover an inflamed or even excoriated surface, from whence a nauseous viscid fluid is exhaled.

Now let us compare with the above variety the porrigo *granulata* of Bateman and Willan, or, as we have it, the impetigo *sparsa* of the scalp. We do not find this form of the disease so extended as the last; we find it more confined. It commonly occurs on the crown and back of the head; it differs remarkably from impetigo *larvalis*, in the absence of that abundant exudation which we saw in the preceding variety, and in the dryness of its scabs; and this is probably owing to the fact that there is less inflammatory action. In other respects it commences by small pustules very similar to the last, often with a hair passing through them, but the fluid they contain quickly dries up, and produces hard, irregular, dry, brownish scabs, strongly adherent to the roots of the hair. These crusts, so formed, constitute the only peculiarity of this affection; they acquire a hard and unequal surface, and a brown or dark grey colour; they have been likened by Alibert to pieces of mortar or plaster fallen from old walls. They exhale a disagreeable sickly odour, which some persons have likened to rancid butter, and which, in those persons who are not very cleanly, is sometimes extremely offensive. Where proper attention to cleanliness is paid the smell is not offensive. It often happens that in the intervals between the scabs the scalp desquamates slightly. Usually, the scabs are more stationary than those of the preceding variety. The impetigo *granulata* is not usually shewn at so early a period of life as the impetigo *larvalis*; not

generally before the second year. I think, also, it is oftener seen in children with brown hair, and its tendency is always to assume a chronic form.

Neither of these affections is contagious; both may be owing to a want of cleanliness, and general debility, from misery: but impetigo *larvalis* is most commonly seen as a consequence of the irritation of teething. Impetigo *granulata* is much less frequently seen than the *larvalis*; and probably the granular variety may require a particular state of scalp and constitution for its development.

**Diagnosis.**—There is one circumstance which has caused impetigo *larvalis* to be confounded with porrigo *scutulata*; but there must have been much ignorance or carelessness for it to happen. If impetigo *larvalis* has existed long, and been neglected, the hair may fall off; but then it is soon replaced with similar hair, because the bulbs are not destroyed. As to the impetigo *granulata*, the crusts are so characteristic that as long as they exist no difficulties as to diagnosis ought to be experienced; yet they have occurred, and therefore it is my duty to put you on your guard against them. There are cases where porrigo *scutulata* presents granular scabs, somewhat like impetigo *granulata*, and I am satisfied that they have been so described. Impetigo *granulata* never presents those large incrustations that are seen in porrigo in that state; besides, if the scabs are thrown off the circular form of the patches, and the character of the pustules are sufficient distinctions. Impetigo is never contagious, and never destroys the hair-bulb. As to the impetigo *larvalis*, it may, at an early period of scabbing, or even during the pustular period, be confounded with the variety already described: if we take a passage from Bateman, we must think it is very likely to be confounded with porrigo *favosa*. And John Burns seems to think that the crusta lactea tinea muciflora, porrigo *larvalis*, and porrigo *favosa*, are identical; but it is not likely that impetigo *larvalis* can be confounded with what we know as porrigo for reasons hereafter to be stated.

**Treatment.**—To cut the hair short with a scissors, and to get rid of the scabs, is the first step in the treatment of these affections; but there is something else to be kept in view in cases of impetigo *larvalis*. In the case of an infant teething, eczema or impetigo may be the result of the irritation; and both must then be tenderly treated, because their influence is salutary. In those cases the irritation is quieted by keeping the parts moist by emollients; some nurses are advised to accomplish the same object by pressing some milk from the breast over the part; sometimes good is got by changing the nurse in those cases. If there be much in-

inflammation, in a strong child, it may be prudent to place leeches behind the ears. When the hair is quite short, if the redness is lessened and the scabs are got away, so that any remedies can be applied directly upon the diseased integument, the sulphate of potash lotion will be found very useful. That may be applied morning and evening, and during the day and night the part may be kept covered with common sulphur ointment: the head should be well washed with yellow or soft soap morning and evening, before the lotion is applied. Some people recommend, where the case is obstinate, issues and blisters to the neck. I am not sensible that I have ever known good to follow the use of these means.

As to internal treatment, it must depend upon the condition of the individual. Where laxatives and occasional purges of calomel are well borne, I have generally found them useful; but impetigo commonly makes its appearance in scrofulous children, and then generous feeding and preparations of iron may be necessary to bring the disease into a condition for cure. As may be supposed, where the disease is a consequence of a slow deterioration of the system, there is often experienced much difficulty in getting rid of it. In some such cases good is got from the use of mineral acids, from dulcamara, and in some very obstinate cases, where ordinary means have failed, the disease will yield to arsenic.

*Favus*.—We must now consider the most important, and by far the most obstinate, of all the diseases of the scalp. To this affection the ancients attached the term *tinea*. Avicenna included under it two different diseases, the one humid, either impetigo or eczema—the other dry, the *favus* of the moderns. Guy de Chauliac admitted five species of *tinea*. Paré reduced them to three, and since his time authors have limited the number they included under the term, according to the ideas they attached to the disease. Lorry was disposed to admit only a single species, the *tinea lupinosa* of Guy de Chauliac, the *teigne faveuse* of Alibert, the *porrigo favosa* of some others. The Arab distinction seems to me to have been the fruit of careful observation; they limited the term *tinea* to a *dry scabby* affection of the scalp. Bateman maintained that the primary lesion in *tinea*, which he called (erroneously, as it would appear) *porrigo* (for that term should be restricted to a dry furfuraceous, and not a pustular or scabby affection), consists in an eruption of *pustules* called *favi* and *achores*, which he believed belonged to two different forms of *tinea*. Many later authors have been frightened at the confusion of language introduced into descriptions, and have included all scalp diseases under one common term, *tinea*; but a glance at

Alibert's "*Arbres des Dermatoses*" will show as much confusion as existed before. Because I think the term *porrigo* inapplicable, I prefer to apply, to what was Lorry's *tinea*, the term *favus*; and as it presents two varieties, we will, with Alibert, call one *favus vulgaris*; the other, *favus scutiforme*.

I must, however, in classing *favus* among pustules, guard myself by stating my belief that the *favous* element is not a true pustule, but perhaps from the first a dry crust or scab. Whether or not it be of a tubercular nature, is a matter of doubt. In a few words, then, I wish to convey to your minds, under the term *favus*, a special disease of the scalp, commonly occurring in infancy, susceptible of transmission by contagion, seated in, or in immediate relation with, the piliferous follicles, and very often inducing baldness at the affected point. It is particularly characterized by crusts imbedded in the tissue of the skin, of a pale yellow colour, with a more or less well-defined central depression, which gives the scab much of the appearance of the cell of a honey-comb—whence the term *favus*—or of that of a lupin seed—whence the name *porrigo*, or *tinea lupinosa*. Many persons adhere to the opinion that it should be ranked as a primarily pustular disease—that is, that a pustule precedes the production of *favous* matter; others maintain that the pustule is not a necessary precursor of the development of the *favus*. Some persons maintain that the very small yellowish pustules imbedded in the integument of the scalp constitute the commencement of *favus*; others believe that they are more an accidental than an essential feature of the disease—that where these pustules are observed the *favous* scab is sometimes wanting, and that the *favous* crust is sometimes found where the pustule is wanting.

I apply the generic term *favus* to two affections of the scalp which present certain well-marked characteristics. In either case the disease commences in the same way, the subsequent differential characters mainly depending upon the particular form which the disease assumes. When these affections have occasioned so much uneasiness as to direct attention to them, we usually see a red, scurfy, and slightly raised patch at some part of the scalp; the hair has evidently been falling off, so as to leave the point less covered than the adjoining parts. The hair which remains is often broken, and very easily removable. At this time it often happens that the minute pustule-like bodies to which we have already referred, do not exist at all. When they make their appearance, the itching seems to increase, and scratching is incessant. Whether, as a rule, the small *favi* are ruptured, the contagious matter spread, and the disease is in this way

extended, is, to my mind, more than doubtful. I have rarely known such a crust so broken. Each favus is usually traversed by a hair; but it may exist without presenting this phenomenon. Whether it has any very necessary connection with the hair, it is not easy to decide; whether the hair acts as a kind of foreign body, around which these small bodies are developed, or whether there is any nearer connection between them and the hair-bulb, is also matter of uncertainty. Two facts, however, must be admitted, that the disease, left to itself, will generally destroy the hair-bulb at the point; and that, if the hair be removed early, it will be reproduced. This favous crust is of a whitish-yellow colour, with a depressed centre. If there be many of them together, a honey-comb appearance is produced by their coalition. These crusts commence by little capsules, at first scarcely visible, which increase slowly. At first they offer a plane surface, which is soon followed by a central depression with raised edges. It opens so as to shew a yellowish-white or brimstone-colour matter. It is almost always seen on the head—very rarely on other parts of the body: but there is this to be noticed, that it may appear on parts totally deprived of all but downy hair. To these crusts the term *favus* has been attached. They may have existed long, and become very large; and below them the skin has undergone some change. When they fall off, they are not renewed at the same point. Numerous pustules may accompany them: and this fact has given rise to some confusion, from a belief that, in all cases, they had a necessary connection with them. Sauvages, Alibert, Murray, and Mahon, are of opinion that the *favus* is due to a morbid excretion of the sebaceous follicles; and that in virtue of a secretion *sui generis*, the matter furnished by those follicles is secreted in greater abundance than is natural, heaped up, and coagulated, losing its ordinary fluidity. Baudelocque follows in the wake of Duncan and Underwood, who were of opinion that the hair-bulb is the seat of the disease; that it is not a pustular affection; and that those small pustules which are seen about it, merely accompany it. Rayer, Cazenave, and Schedel, follow the ideas of Lorry, who regarded those pustules as the disease itself. He placed their seat in the cutaneous integument; the disease of the hair-bulb being, in his opinion, a consequence of the extension of the disease to it. No one, who has carefully observed even a few cases of favus, will deny that, during the progress of the disease, small pustules are often developed by the side of the true favus. Biett thought that the acuminate glands, which are destined to secrete the fluid which lubricates the hair, were the seat of favus. You may see, in a

case of favus, portions of the scalp studded with small impetiginous pustules; but they do not produce the favous scab. Intermixed with them you may see the small cupped scabs of favus developed, enlarge, and extend, the disease stretching from point to point, till much of the head is covered.

Baudelocque has endeavoured to reconcile the formation of favus and its scab with his ideas on the seat of the disease. "I suppose a piliferous follicle attacked with this vital modification; the matter which it will secrete, and which we may call favous, will fill this cavity, will become concrete, and form a little tubercle; the secretion continues; the fluid will dry around the already formed tubercle, will increase its size, and soon the follicular cavity will be filled—then distended. Still the favous matter, trying to escape, penetrates into the contracted portion or neck of the follicle, and is retained at its orifice by the epidermis. Here it dries. As a new quantity of matter is secreted, it is forced towards the orifice; the neck is still further dilated, until this conical portion becomes cylindrical; then it presents a slightly convex surface. As the orifice enlarges more and more, it places itself almost on a level with the fundus of the follicle, whose cavity is transformed into a very superficial excavation." He adds further, "we can easily comprehend why the primitive tubercle, intimately united to the epidermis, is not elevated with it, if we recollect that at first this tubercle has exactly the form of the follicle; that it presents a rounded portion, surmounted by a contracted portion, which becomes enlarged beyond the orifice. This tubercle, dragged by the epidermis, which tends to raise it, is retained in the cavity of the follicle by the neck, which it cannot pass; it remains immovable; and it is only when the neck of the follicle has disappeared, by becoming completely enlarged, that the favous crust may be easily detached from the skin." However ingenious this explanation may be, is it exact? The author of it sets out, from a disputed anatomical fact, to deduce pathological consequences which may therefore be wanting in accuracy. Thus he thinks that the hair follicles are seated in the substance of the cutis: that of course corresponds with his remarks upon the depth to which favus may reach. But it is said that it is at present demonstrated that the piliferous bulbs are attached to the inner surface of the derm, in a part which *tinea* very rarely reaches, and only when of very long standing. If that be true, M. Baudelocque's theory is not. Letenneur, after pointing out the lesions which occur at the extremity of the piliferous canals in favus, says that the pustule is formed by the accumulation under the cuticle of a small quan-

tity of yellowish pus ; that it never passes the level of the skin, and that it is by its drying up on the third or fourth day that the favous crust is formed : at first small, but well marked, it presents a small well-rounded cup, the borders being neatly raised ; that, during some days, the cuticle covers it : and he adds, that, adherent by its deep surface, it presents a mammellated appearance, and that there it is humid, and that he has never seen it contracted or strangulated at the " point of union of the two parts of which it is composed."

M. Gruby, following Unger and Schönlein, has examined the crusts with much care, under the microscope, from the moment of their first appearance to that of their full development : he conceives he can demonstrate that they are developed between two laminae of epidermis, by which they are enclosed, as it were, in a capsule ; that as soon as they have acquired a certain size, the envelope gives way at its circumference. At starting they appear in the form of a small point with a plane surface ; soon their edges begin to rise ; and in their centre a small opening is seen, which corresponds to the cavity, which is hollowed in the centre, from which the two surfaces, external and internal, are removed. The first is not long in passing its borders, becoming ruptured and everted, being covered with a more friable but less yellow matter than that of which they were formed. The external surface forces its way downwards, forming depressions in the integuments. Examined with a lens their progress is easily followed, whether examined on the living body, or detached and submitted to a microscope whose power is equal to eighty diameters. With a glass of this kind Gruby conceives he has proved that favus is a species of cryptogamous fungus, which he named " mycoderme," which not only present that aspect and form, from their origin to their maturity, but that, when they have arrived at the latter period, if they are divided into portions, and submitted to glasses capable of magnifying three or four hundred times, the fruit and sporules can be perfectly demonstrated to exist in the interior of their cavities, as occurs in other fungi belonging to the vegetable kingdom. He thinks favus is produced by seeds ; that the roots stretch in all directions ; into the piliferous canals, and other conduits, affecting the hair bulbs, which they seriously injure, and other points. The depressions which they leave on the cutis, do not, according to Gruby, present ulcerations : but this is not correct, except when the disease is very superficial ; for around the deeper-seated crusts there is often seen a true suppuration by which the tissue is irritated and destroyed. It is true that in many cases we can detach the crust without hurting the subjacent part,

and that the resulting depression is soon effaced without leaving any trace of cicatrix.

Such are the ideas generally entertained with respect to this singular disease, favus. Whether the disease be a fungus or a tubercle, whether it have any necessary connection with the hair bulbs, I can hardly venture to hazard an opinion. I have never seen favus on a part totally deprived of hair ; and it is certain that the disease disappears from a part, the scalp, for instance, when the hair has long fallen off. It is true it may continue for a time after the hair has been removed ; but then, what proof have we that the bulb has been destroyed ? My present inclination is, that there is a tolerably direct connection between some portion of the bulb or its appendages, and favus.

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ON

## ARTIFICIAL CLIMATES

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH.

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 689.]

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UNDER the present head, *domestic ventilation* is being discussed apart from the question of warmth ; the observations upon it in conjunction with warmth will fall under the next head—The warming of dwellings, and their atmosphere. In the meantime, while I desire, as before stated, to confine myself chiefly to the consideration of the atmosphere of dwelling apartments and offices, I am unwilling to omit altogether the ventilation of public buildings. The question is one not only of importance to public health, but it also immediately affects the purposes for which people assemble together. When the body is distressed, it is not possible that the mind can afford to any subject a calm and unwearied attention ; and to any but the vigorous, a detention, during two hours even, in an oppressive atmosphere, is injurious. When frequently repeated, we know it to lay the foundation of the worst diseases.

I was led many years ago to observe the very great importance of an abundant ventilation in a tropical country ; and from that time the atmosphere of buildings has engaged much of my attention. On my return to Europe in 1835, it was with regret I found the views, to which both experiment and theory had led me, to be opposed to those from time to time appearing from



the pens of able and influential writers. These advocated a ventilation from below upwards, as the proper direction for the current,—the fresh air being introduced at the lower part of a building, and the impure air carried off above. Such had been my earlier notion also, and for the reasons commonly assigned; but a closer acquaintance with the subject had drawn me away from the influence of these reasons to a full conviction that in almost every instance, and especially in the case of crowded assemblies, the proper course for ventilation is from above downwards, when any *power* is employed for the ventilation of a building. Hearing that the present House of Commons, then in the course of preparation, was about to be ventilated, in accordance with prevailing opinions, by an *ascending* current, I drew up a series of arguments in the form of a letter to the editor of a daily paper\* against the same. Being opposed to many leading authorities, I felt it necessary to support my views by a full statement of reasons; this, however, gave a character and length to the paper which the editor was not able to afford space for at the time, and the paper remained unpublished, though returned with a polite communication that it entered more into questions of science, and was longer than would suit most readers, or than he had space for. This was of little moment, since the defects of the system had no sooner appeared than they were judiciously corrected by a reversion of the current.

I may observe, however, that the views contained in that paper were fully confirmed in the result, the various defects there anticipated being a subject of general complaint afterwards on the part of members of the house.

Though a confirmation, even as to particulars, of the opinions I had offered, could not be otherwise than interesting to me, and to friends who observed it, and who thought the subject ought not to be dropped, I considered it unnecessary to intrude into the question, upon hearing that a remedy of the proper kind had been adopted.

With respect to the method of ventilating the new houses of parliament in progress, I have made no inquiry.

I cannot doubt, however, that the judgment which led to an immediate adoption of a downward course of the current in the present houses, as soon as the evils of the upward course manifested themselves, will ensure for the new houses a downward ventilation. It is well that the work is entrusted to able hands, the importance to the nation being great, not on account of the expense only, but much more on account of the duty of preserving in health and comfort the persons of those who are occupied in the public service, and on account of the policy likewise; for the frame of the mind cannot be calm and cool while the bodily frame is heated, oppressed, and irritated.

As, however, a downward ventilation continues to suffer condemnation on the part of the most recent authors who have made remarks upon the subject, I consider it proper to state the chief reasons which have long appeared to me to point out, for public buildings, a downward course for the ventilating current. In the first place, the whole bulk of the air contained in the loftiest public building forms a much smaller proportion to its assembly, when it is full, than the bulk of the air in any private room does to the small number of persons usually occupying it; therefore a ventilation duly proportioned to the number of persons present, must, in the case of the public building, bring in a quantity of fresh air bearing a much larger proportion to the size of the building than a corresponding supply bears to the area of the private room.

It must be obvious that where the air entering at any moment is large in proportion to the volume of the air contained in the building, it will cause much more current than where the entering air to that in the chamber is small. I have remarked upon the difficulty of introducing air, at all freely, at the bottom of a room, on account of the draught it occasions: the difficulty becomes, therefore, much greater in a public building, where the proportion of the supply to the air present is so much larger, and therefore so prone to cause draughts.

Again, the floor of the building being nearly covered by the assembly, the draught of even the very insufficient supply usually admitted by side-holes and by the doors, distresses the persons

\* The Morning Chronicle.



near them, while the bulk are oppressed by a want of air.

Furthermore, the animal heat thrown off by so many bodies being much more than can be carried off by dissipation of it through the windows and walls, tends constantly to raise the temperature of the air too much; it is, therefore, necessary, in a full assembly, to ventilate with air at a considerably lower degree than the temperature intended to be preserved throughout it. Now the human body, when surrounded with warm, or temperate air, cannot at all endure a cold current striking one part. Such a current is much more distressing than if the whole air around were cold. Of this we all have frequent experience. This is a third and serious objection to ventilating from the lower part of the room. If the attempt is made to get rid of draughts by making the air so to ooze in all over the floor as to cause no particular current, it is sure to raise with it the finest particles of dust. It also traverses the clothing of each individual, carrying before it the air about the person, charged with cutaneous exhalations, which air, together with the dust, becomes presented to the face and nostrils for respiration in its ascent.

On the other hand, in favour of a downward current, we have, in the first place, such a distance of the ceiling from the heads of the people assembled as materially diminishes the effect of draughts. Again, the ceiling not being occupied like the floor by any of the assembly, is wholly available for a very perfect oozing ventilation. That is, air may be brought in, over its whole surface, through a cloth or finely perforated metal plate, which may serve as the ceiling instead of the usual plastered laths. I have tried such an arrangement many years ago with good effect. Descending at every point, the air presses before it all that below. The freshest air comes first to the mouth and nostrils, supplying respiration, and afterwards visits the rest of the body, carrying all exhalations downwards through the floor. Thus, the whole person of every individual will be duly visited by his share of air, preserving a wholesome freshness of the clothing, by carrying off all air loaded by perspiration, but in the right order, after it has visited the face, and not be-

fore it. It has been strongly objected to bringing in cool air on the top of the warmer, that the greater weight of the former will cause it to descend, and mix with the warm air, without pressing the warm air before it. If the air is brought in over the whole surface, this will not take place; and any mixing which occurs, where the ventilation is properly copious, is of no moment whatever. Indeed, it rather tends to lessen the impression of cold when the new air is of much lower temperature than the other; and it thus admits of all the more air entering without any complaints of draughts. These complaints it is which lead to a closure of the inlets, and a consequent suppression of the ventilation, beyond measure more privative of freshness than any partial mixing proves, of the contiguous portions of air. It is of no moment in practice, that the entering air should be kept rigidly separate from the other, and it is not, indeed, practicable, without overlooking other points of much greater importance. In proof of this I may appeal to the case of almost all public buildings, when at all full. In any, in which the atmosphere is not actually oppressive, the ventilation is considered satisfactory; so accustomed are we to find it otherwise.

For the ventilation of public buildings occupied by large assemblies, I would always employ mechanical means, urged by a suitable power. The pressure required to carry down the air of the assembly against any buoyancy it could possibly acquire, and especially against any it should ever be permitted to acquire, would not be worthy of notice. The perforations for the inlet of air might amount collectively to one-tenth of the whole ceiling; yet, in a very large building, the buoyancy would be overcome with a small fraction of the force which ought to be employed. Several writers have remarked upon the loss of effect incurred by employing fuel solely to create a draught in the large chimney by which the houses of parliament are ventilated. Though there can be no question but that a quantity of fuel is thus consumed very much larger than would suffice to effect the work through the medium of a steam-engine, it is not to be supposed that the scientific projector of the plan was not aware of this so obvious a fact. The immediate ob-

ject to be attained was an effective ventilation of the temporary houses. As long as this was ensured, the consumption of fuel for the purpose, though very large, might not have been considered of moment, especially since it would not be permanent. As a general rule, however, the employment of fuel for creating a draught ought to be confined to buildings of smaller dimensions, and less crowded by assembled people; and, as formerly stated, a warming effect should at the same time be obtained from the fuel.

Public buildings of large dimensions, when not full, are, owing to the quantity of space being great when compared with the assembly, sufficiently comfortable, though left to maintain their own ventilation by the ascension of the contained air, and the entrance of fresh air at the lower crevices of the building. But when such buildings are well filled, they invariably become oppressive to the bulk of the congregation, while some suffer from draughts. A state of things inseparable, in my opinion, from the common system of an unaided feeble ventilation, and an upward direction of the current.

In the case of smaller buildings, as dwelling-houses and offices, I have shown that the power should be that of a column of heated air pressed up an open chimney. It becomes, therefore, closely connected with my third head—the heating of dwellings; under which may also be advantageously considered the direction to be given to the current.

### III. *On the warming of dwellings, and of their atmosphere.*

The warming of a room, and the warming of its atmosphere, are usually confounded together, and considered as one and the same thing. To this I would attribute, in part, the many failures in attempted improvements. Nearly all of them will be found to have regard to the atmosphere only, the other material constituents of a room being neglected. I believe the following will be found a correct view of the question.

A person in a cold room loses heat in two ways: the one, by the direct conduction of warmth from his body by the air around him; the other, by the radiation of warmth from his body to the colder walls, windows, and fur-

niture. Many persons entirely overlook this second loss of heat, and think it is the cold air alone which chills them; whereas, if the walls and windows were at as high a temperature as their own bodies, they would, although many feet off, keep them from being chilled, enabling them to endure, and even enjoy as refreshing, an atmosphere the temperature of which they could not otherwise endure. Of the extent to which radiant heat can counteract the chilling power of a cold atmosphere, we have an instance in the abundant warmth we derive from a large fire in an open building, or even out of doors, if the air be still, although it may be below the freezing point. On the other hand, in a building in which, being rarely occupied, the walls and windows are very cold, we may be chilled by sitting near them, though the air may at the time be fully heated. Hence, in the case of many club-rooms, libraries, or offices, which are warmed entirely by the introduction of hot air, we, in cold weather, experience a creeping and uncomfortable feeling, although the air may be above the temperature which would be pleasant enough if the walls were equally warm. Our feelings prompt us, even in air warmer than we wish, to desire the radiance of a fire, which we had no desire for in the summer. We shall feel this especially in a room of which the windows are large, and have a cold aspect, and which is only occasionally warmed.

To make up for the chilling influence of the walls and windows of rooms, of which the air only is warmed, and in which there is no fire, it is necessary to have the air at a higher temperature than is conducive to vigorous health. To this cause, in part, and to the insufficient supply of air, may be traced the undesirable effects upon the constitution of the atmosphere common in dwellings in many of the northern countries of Europe, as is manifested in the complexion, especially in that of women and children.

For the above reason it has long appeared to me, if we would have perfection in our system of warming dwellings, we must command a source of radiant heat within our rooms, from which rays shall be continually projected upon the walls, windows, and

furniture. These rays, we know, traverse the air of a room without heating it, so that the solid matter of the room, its surfaces and furniture, become so warmed as not to chill us by their vicinity, but, on the contrary, radiate towards us, returning to us heat for heat. These solid surfaces receive, in fact, the whole heat of the fire, and thus, instead of drawing heat from the air of the room, as in the former case, are themselves the medium through which the air is warmed. Such an arrangement may be pronounced excellent; but it is not complete. The copious and healthful ventilation which an open chimney can command, with suitable inlets for air, proves more than can be properly warmed by the heat of an open fire alone, which has to be communicated to it through the medium of the furniture and walls. Hence the air is liable to assume the form of chilling draughts, unpleasant to all persons, and injurious to the delicate. The air ought, therefore, to be warmed before its admission. And whatever the means may be by which it is previously warmed, I would set a much lower limit to the temperature of any metallic surfaces which may be employed to warm it than even the comparatively moderate temperature which of late years has been employed. I do not think the warming surface should much exceed the boiling point of water. By having a source of *radiant* heat within our rooms, and *combined* heat entering with the air, and by paying due attention to the purification of the air, and the regulation of its *temperament* (that is, its condition as to proportional moisture and warmth), we establish a system, the comfort and salubrity of which must be felt to be duly appreciated.

The principles which should, I believe, chiefly guide us, are comprised in the above general remarks. But, to be useful, we must not deal only in generalities. It is necessary to attend to particulars, and perseveringly to follow them out into practice.

It becomes, therefore, requisite to enter into a somewhat minute inquiry into the comparative merits of the different systems for effecting the important purposes under consideration.

It is, while making this inquiry, we may advantageously discuss a question

of the first moment; namely, how, in the case of dwelling-rooms, the air can be freely introduced in such a manner as not to create draughts, nor to pass away without performing the office of ventilating the whole room, while traversing it. This involves with it the question of the direction to be given to the current; whether it should ascend, entering from below and passing off at the top of the room, or descend, entering from above and being drawn off below. In the case of public buildings the question has been already discussed.

We shall find that this inquiry forms part of a comparison of the system of warming and ventilating rooms by means of an open fire and chimney, with the antagonist system, much advocated of late years, of closing up the chimney, and employing a closed stove in the room, to warm, and it is said, to ventilate it. The open fire, when the admission of air to a room is properly arranged, falls under the head of *downward ventilation*, while the close stove, with a closed chimney, comes under that of *upward ventilation*.

The opponents of the former dwell, not without reason, upon the carelessness of the prevailing arrangements in our houses, allowing cold draughts to pass in at apertures under doorways, chilling the feet of the inmates, which draughts of air are for the most part unavailing for ventilation, since they flow to the fire, and, becoming heated by it, pass up the chimney unemployed. This, however, is a defect by no means inherent in the open fire ventilation. The air need not be allowed to enter the lower parts of a room excepting during the transient opening of the door. It is perfectly practicable, by thickening the carpet under the door, or by means of a drop-board, to prevent the entry of air below.

If, then, suitable apertures are left near the top of the room, fresh air will enter by these, while the stale air passes up the chimney. In this manner a downward ventilation may and does take place in all rooms; in such as have the lower crevices well closed, this ventilation is very complete. From what has been premised already, the reader will know that I am not here advocating the admission of the air in a *cold* state. That is another question.

But the principle itself, of ventilating with a downward current, is severely

condemned by many, as an interference of art opposed to what is natural and proper. I might here refer, in defence of the downward course, to the preceding remarks on public buildings, and to the matter of fact, that the ventilation of them is universally complained of, yet the ventilation is by an *upward* current; while, in the instance of the House of Commons, the great defects of the upward, led to the adoption of a downward course for the air, with a very satisfactory result.

But there will be no difficulty in showing in our present case—that of dwelling-rooms and offices, that all sound principle, as well as facts, are in favour of a downward course for the air.

Persons who object that, the tendency of warm air being to rise, we ought not to make it descend, overlook the statics of the case before us, and are evidently carried away (as already observed) by impressions received in the oppressive atmosphere of a public assembly, and that in a loftier building, than any ordinary room. The ascending force of the air in any ordinary room I have formerly shown to be very trifling; especially of air no more warm than is wholesome. This force is unworthy of notice, when compared with the ascending force of the heated, and lofty, column of air in a chimney which opens into the bottom or lower part of a room. Hence we may take up their words, and say, “Yes; the tendency of warm air is to ascend, and we avail ourselves of this tendency, and give it real and effectual power, by creating a perpetual ascending column of *well heated* air in a lofty chimney, which is thus independent of, and over-rules at once, the feeble and uncertain buoyancy of the air in the room.” The arrangement is that of a syphon of a powerful kind, the long stem of which, the chimney, has great proportional length to that of the short stem—the height of the room. Added to this, is a peculiarity, giving it an advantage over any ordinary syphon in which the fluid in each stem is of the *same* specific gravity, so that the effect arises from the difference of length alone, yet no person doubts the certain action of a common syphon, or complains of it as an unnatural arrangement. But in the syphon in question—the chimney, we have not only the usual principle

arising from the difference of length in their stems, and that in high degree, but, superadded to it, we have the constant change in the gravity of the fluid by the admirable arrangement of heating it as it enters the chimney, which greatly increases the power.

Thus we find the argument in favour of an upward course, drawn from the ascending force of heated air, wholly gives way, for when we apply this force in a really effective manner, it suits a downward ventilation perfectly well, so far as power is concerned, while we shall find it in other respects much more suitable to a downward than to an upward course.

The most general, and apparently weighty, argument against a downward course, must not be left without examination. When analyzed, it will prove less tenable than the former. It is said, that the air immediately around each person in a room, especially his breath, being heated, tends to rise, and should not be brought downwards. The observed condition of a crowded and ill-ventilated place no doubt gives weight to this argument. But when ventilation is of a wholesome amount in any place, the warmth from the bodies of the inmates will have no appreciable effect upon the steady course of the ventilating current. In any such room, it does not in the smallest perceptible degree retard the drawing of the chimney. Neither has nature by any means especially provided, as is stated, for the ascending of the air around the human body. In the first place, the structure of our own ventilating organs is rather opposed to it. They who dwell upon the ascension of our breath as a matter of importance, might complain of the structure of our nostrils. However easily the habit of breathing through the mouth may be required, there can be no question but that in England nearly all persons breathe through the nostrils at most times. Now, from their pointing downwards, the breath is propelled by the muscles of expiration with very considerable force downwards. Hot as the breath is, its buoyancy does not in the least save it from being driven downwards, even through the heavy air of cold weather. It may then indeed be seen descending to the knees, and it might be traced, no doubt, to the very ground, did it not become so far mixed with the air generally as to have



its vapour, the precipitation of which had rendered it visible, again dissolved; when it ceases to be seen. Here is a case, which, if the system of *downward* ventilation stood in need of any such arguments to help it out, might certainly be claimed on the side of it, as directly favouring it. They who lay much stress on the supposed upward tendency of our buoyant breath, must have overlooked the far superior force of this mechanical propulsion of it downwards to our feet; or until it is so thoroughly mixed with the air that it is not possible it should rise by itself. If the ascension of our breath were of the importance it is supposed, we surely would have been created with inverted nostrils, so as to project our breath upwards in the required direction, instead of downwards with a force which overpowers altogether its feeble buoyancy. To their existing structure we may then appeal, and may safely affirm of the evidence it affords, that so far from supporting the notion that the ascension of the breath of our nostrils is a natural arrangement, it leans to the contrary side. In fine, there can be no doubt that this argument regarding the ascending of the breath has been also taken from the very different and improper state of things in crowded assemblies, where there is a *great accumulation of animal heat*, and consequent *general buoyancy* of the *whole* air, owing to the defective ventilation.

Secondly, the current of spontaneous ventilation in human dwellings is so far from *universally* flowing from below upwards, that in *much more than half* of the dwellings of the human race, during half the year at least, the ventilation of rooms, not acted on by any chimney, takes place *spontaneously from above downwards*; and this in countries, and at the seasons, in which, from the high temperature, a far more abundant ventilation is needed than in our own. The fresh air comes in at all crevices or at any windows in the roof, and at the tops of ordinary windows and doors, and the stale air descends, and flows out at the bottom of them. This should remind us not to adjudge that only to be rational and proper which may appear so, under certain conditions, upon the smaller scale of things around us; but to look to large continents, thickly inhabited, where the opposite condition obtains. We,

who advocate a downward ventilation, may fairly appeal to the case of these, and argue, if a downward ventilation prevails spontaneously throughout regions where the most abundant supply of air is needed, that we cannot err in selecting it as the course for our ventilation, since we have an excellent inverted syphon—our open chimney, for ensuring the downward action in perfection.

[To be continued.]

## REMARKS

ON THE

### NOMENCLATURE AND CONSTITUTION OF CERTAIN PHARMACEUTIC SUBSTANCES.

By THOMAS HOLT, M.D. Univ. Edin.;  
M.R.C.S. Lond. and Edin.

(For the Medical Gazette.)

It is greatly to be regretted that the London College of Physicians should have been so hasty in breaking off the agreement with the Edinburgh and Dublin Colleges for the publication of a general Pharmacopœia for the whole United Kingdom, by which we should have been, in some measure, relieved from the confusion arising from the different processes adopted in the preparation; also from the inconvenience and danger attending the whims of a College, in changing and giving what name it pleases to the different medicines in general use.

In the last edition of their Pharmacopœia, the London College has endeavoured to follow chemists in giving the names expressive of their composition to the chemical substances, by which important articles have had their names altered, causing great danger to be apprehended from prescriptions; the Edinburgh College, however, has made a great advance (to use an Hibernicism) in going back to the old and generally-used names. "We believe there are few physicians, and not many chemists, who entertain any doubt that the Colleges committed a great error when they were first seduced by the philosophical attractions of modern chemical nomenclature, to abandon, for the terms of scientific chemistry, the trite names formerly used in pharmacy and medical practice. The more decorous dress of science or



philosophy has been dearly purchased at the cost of being compelled to follow the changing fashion of the day. We apprehend that practitioners will not submit much longer to the constant fluctuations which have been for some time forced upon them in pharmaceutical nomenclature."—(Ph. Edin.)

It would be well to adopt the scientific names indicating the constitution of substances, provided that chemists were agreed in adopting an uniform system of nomenclature; and also if the atomic weights could be certainly and positively decided; but such a state of perfection is not likely ever to be attained, and it will be endeavoured to consider the composition of some of the more important pharmacopœial substances, for the purpose of showing that the names adopted by the London College are, in many instances, liable to objection.

The mercurial salts, and especially the chlorides, have been brought forward to show the advantages of the terms chloride and bichloride of mercury, given in the *Pharmacopœia Londinensis*, as expressing at once the composition of calomel and corrosive sublimate: there is no doubt that calomel contains eighty-five parts of mercury and fifteen of chlorine, or thereabouts, per cent.: but whether to one equivalent of chlorine it contains one or two equivalents of mercury, is not agreed upon. The College takes the equivalent of mercury at 202; while others, including our highest chemical authorities (Professors Graham and Kane) take 101 as more probable: and if the College were to follow the same rules of nomenclature in the next edition of the *Pharmacopœia*, we should then have chloride of mercury representing corrosive sublimate; and calomel, being a subchloride, would become dichloride of mercury: so that prescriptions containing chloride of mercury being made up in accordance with one edition of the *Pharmacopœia*, would give a most corrosive and virulent poison, and according to the other edition a comparatively mild and harmless medicine; and the alteration of names would not rest with calomel and corrosive sublimate, but the oxides, iodides, cyanide, sulphurets, indeed the whole of the mercurial salts, would undergo a corresponding change: for

instance, the red oxide (the present binoxide) would be named hydrarg. oxydum; and the black oxide, the hydrarg. oxydum, would become a dinoxide; and the salts of mercury are so frequently prescribed, calomel especially, that it is impossible to conceive the mischief (too often fatal) which would ensue.

The white precipitate of mercury of the late London and of the present Edinburgh *Pharmacopœias* was considered by Hennel to consist of—

1 eq. red oxide of mercury.

1 eq. hydrochloric acid.

1 eq. ammonia.

Phillips and the London College name it ammonio-chloride of mercury, and consider it as composed of—

1 eq. corrosive sublimate.

1 eq. red oxide of mercury.

2 eq. ammonia.

But Dr. Kane proved that it contains no oxygen; consequently both the above must be erroneous. The view proposed by the latter high authority, and in this opinion of its constitution he is supported by Graham, Liebig, Gregory, &c. is, that it is a compound of the amide with the chloride of mercury. Dr. Christison (Ph. Edin.) considers it as chloride of mercury (calomel) with ammonia. Another view of its constitution might be taken (which has not been suggested, that I am aware of), viz. to consider it as composed of a compound basyle, analogous to ammonium, with chlorine, for it has the composition of the chloride of ammonium, only that two atoms of hydrogen are replaced by two corresponding atoms of mercury; and Wöhler's white precipitate has also a similar composition—one atom only of hydrogen being replaced by mercury; and according to Mitscherlich the crystalline form of the latter belongs to the regular system, like that of sal ammonia (quoted by Graham). This would rather tend to strengthen the equivalent of mercury being 101, which has been doubtful, chemists being ignorant of any unobjectionable isomorphous relation of mercury to the magnesian family; but if the above view be taken, we have mercury substituted for hydrogen (which is of the magnesian class), and the form of the crystalline remaining the same. Then the formulæ would stand as follows: viz.—

H Ad + H Cl = Kane's Formula for Sal Ammoniac.

Hg Ad + Hg Cl = Do. Do. White Precipitates, supported by Graham, Liebig, Gregory, &c.

N H<sup>4</sup> + Cl = Berzelius's View of Sal Ammoniac.

(N H<sup>2</sup> Hg<sup>2</sup>) + Cl = View proposed of constitution of ordinary White Precipitate.

(N H<sup>3</sup> Hg) + Cl = Do. Do. Do. Wöhler's White Precipitate.

Hg Cl + N H<sup>3</sup> = Formula of Wöhler's White Precipitate given by Graham from the analysis of Kane.

The constitution of the ammonio-chloride of copper, which appears analogous to that of the white precipitates,

also favours this view, if the formulæ be compared.

(N H<sup>3</sup> Cu) + Cl = Graham's Formula for the Chloride of Cuprammonium.

(N H<sup>3</sup> Hg) + C }  
(N H<sup>2</sup> Hg<sup>2</sup>) + Cl { = Vide supra.

In medical practice, whichever view may be adopted of the chemical constitution, the term white precipitate of mercury appears as good as any, and not likely to be generally superseded; but if the view proposed be received chemically, a term composed of hydrargyrum and ammonium (like cuprammonium) would be objectionable from its length, and one formed of *ἑρμης*, mercury and ammonium, might be perhaps suggested, as hermammonium, chloride of hermammonium, &c. This view of the constitution would apply also to the other precipitates of mercury, formed analogously with salts like the chloride.

The equivalents of arsenic and antimony are also doubtful: the College taking 64.6 for antimony, and 37.6 for arsenic; whereas Graham (*nulli secundus*) doubles the number, which of course will alter the names of such compounds as sesquioxide of antimony (Ph. Lond.) sesquisulphuret of arsenic, &c.

The ammoniacal salts may be variously considered as to their constitutions; *e.g.* sal ammoniac is viewed by the College, and named, hydrochlorate of ammonia. Graham, Liebig, &c. adopting the most probable view, viz. that of Berzelius, from its various analogies, consider it to be a chloride of the compound hypothetical basyle—ammonium; and I recollect Dr. Kane in his lectures taking considerable pains to show that it was neither one nor the other, but a kind of double salt composed of the amide with the chloride of hydrogen. The London College has applied the term "sesqui-carbonate of ammonia" to the substance named by the Edinburgh College "carbonate of ammonia;" but Graham's opinion

appears to be, that it is not a direct sesquicarbonate, but a compound of the bicarbonate with the neutral carbonate. Rose views it as carbonate of ammonia with bicarbonate of oxide of ammonium.

The carbonate of soda of the former Lond. Pharm. is now named by the same body "sesquicarbonate of soda;" whereas the Edinburgh College, Graham, &c. consider it to be a "bicarbonate." Dr. Christison says that it is not, and ought never to be, a sesquicarbonate of soda.

The cream of tartar named in the pharmacopœias "bitartrate of potash," consists of only one equivalent of tartaric acid united with one equivalent of potash and one water; and the "tartrate of potash" (neutral tartrate), having both equivalents of water of the acid replaced by corresponding quantities of potash, consists of only one equivalent of tartaric acid, and two of potash.

The bleaching substance has been named "calx chlorinata;" and its constitution has been very variously stated. Dr. Ure considers the elements not to be in regular atomic and definite combination, but that it contains a variable proportion (from 1 to 40 per cent.) of chlorine. Dr. Dalton, that it is a hydrated subchloride. By Berzelius it is thought to consist of chlorite of lime with chloride of calcium. Dr. Thomson appears undecided which of the two last to adopt; in his "System of Chemistry," and in the "Annals of Philosophy" (1820), inclining to the former; and in his article in the "Encyclopædia Britannica," to the latter view. Balard considers it to be hypochlorite of lime with chloride of calcium. Millon, however, offers the most satis-

factory view, viz. that it is a kind of oxychloride of calcium, the second equivalent of oxygen of the peroxide of calcium being replaced by chlorine, analogous to the oxychloride of hydrogen, or hydrate of chlorine, &c. and holds the same opinion regarding the corresponding compounds of sodium, potassium, &c. : thus its old and everyday name, chloride of lime (chloride of oxide of calcium) represents its composition as well as any, and better than most of the others.

By the French and German chemists, who deduce the equivalents from their volumes, the atomic weights of chlorine, iodine, bromine, fluorine, hydrogen, and nitrogen, are only half as high as those used by British chemists; consequently, such compounds as hydrochloric acid, &c. will also be only half as high; and water, considered here as the neutral oxide (HO), is represented on the continent as a suboxide, or two atoms of hydrogen to one of oxygen ( $H_2O$ ); and therefore Thenard's oxygenated water is looked upon by the continentals as containing equal atoms of oxygen and hydrogen; whereas, in Britain, it is considered as a peroxide of hydrogen, containing two equivalents of oxygen to one of hydrogen. For the like reasons, common salt, being in this country generally\* considered as chloride of sodium (atom to atom), is on the continent represented a bichloride of sodium—two atoms of chlorine to one of sodium ( $NaCl_2$ ).

In the formation of the "potassii sulphuretum" the product appears to vary with the temperature employed; perhaps generally containing sulphate and undecomposed carbonate of potash, and the ter- and quinto-sulphurets of potassium. Might not the quinto- or penta-sulphuret of potassium be considered as the analogue of sulphate of potash? The formula for sulphate of potash is  $KO, SO_3$ ; and suppose sulphur to be substituted for

oxygen (as it frequently is), we should then have  $KS + 4S = K + 5S$ , or penta-sulphuret of potassium.

The College uses the term chloride of barium for the substance named by the Edinburgh College muriate of baryta, either of which it might be considered, being chloride of barium with two atoms of water, or hydrochlorate of baryta with one atom of water. The former of the two is generally received as the more probable among chemists, though Dr. Hope, of Edinburgh, still clings to the latter view. Graham also, in his lectures at University College, proposed to view the salts of the alkaloids in the same manner: for instance, he considers that hydrochlorate of morphia may be "chloride of morphyle."

The same reasons, in like manner, which prompted the London College of Physicians to alter the names of some pharmacopœial compounds, and to adopt the chemical nomenclature (as they thought), might also have suggested to them that new names—*sesquipedalia verba*—should be adopted in other instances for the sake of classical uniformity.

The terms potassa, soda, magnesia, calx, alumina, &c. do not point to the chemical composition of the substances, but rather leave it to be understood that the same are oxides of the metallic bases, potassium, sodium, &c. Nor do such terms as cyanogen and ammonia give the slightest idea as to how these are composed. Who would see in the term cyanogen a bicarburet of nitrogen? or in ammonia a compound of 1 eq. of amidogen and 1 eq. of hydrogen proximately, or 1 eq. of nitrogen and 3 of hydrogen ultimately?

The College might not wish to borrow for the lunar caustic a term having any reference to the dominions of Pluto, but "argenti nitras" can only be regarded as an useful abbreviation, the substance being, not a "nitrate of silver," but a "nitrate of the oxide of silver;" so also the names of other salts, as cupri sulphas, plumbi acetas, &c. &c. are not literally correct, but are used for their comparative shortness.

Many of the acids, as the nitric ( $NO_3$ ), oxalic ( $C_2O_3$ ), tartaric ( $C_4H_4O_{10}$ ), acetic ( $C_4H_3O_3$ ), &c. have not as yet been isolated, or shown to have any separate existence; and even if they

\* Professor Clark, of Aberdeen, inclines to double the atomic weight of sodium, making it 46.6 instead of 23.3, in which case soda would become a peroxide or binoxide, common salt a bichloride, &c. On the other hand, Johnstone, of Durham, from its isomorphous relations to silver (whose atomic weight he would also divide and consider 54 instead of 108), is inclined to halve the atomic weight of sodium, making, in that case, soda a suboxide, common salt a subchloride, &c.; the same also with potassium.

could be so isolated, would be entirely different from their hydrated compounds, which are received into the pharmacopœias. Anhydrous sulphuric acid does not appear to be acid at all; "does not redden litmus, and exhibits a disposition to combine with salts, such as chloride of potassium and sulphate of potash, rather than with bases." "The liquid carbonic acid has little affinity for water, does not combine directly with lime, but dissolves in alcohol, ether, and essential oils, like certain neutral bodies."

However beautiful and striking the new views in chemistry may be, it does not appear advisable to keep altering or changing the names of important and dangerous medicines; which appears to have been done, not unfrequently, for the sole purpose of appearing scientific. Even Graham himself only wishes to prove the new theory of salts, without recommending the consequent changes of nomenclature for chemistry itself. How much more unadvisable is it that the names should be changed in medical practice, when on the prescription may depend the very life of the patient? for before a new catalogue of names has come into general use, or has been published half a dozen years, it might be shown that half at least are not in unison with our highest authorities in chemistry; and there is some reason to doubt not a few of the remainder. What real objection can there be to the use of such terms (medically) as calomel, tartar emetic, arsenical solution, red oxide of mercury, black oxide of mercury, corrosive sublimate, &c. when, by their use, so much greater security against mistakes is afforded.

By the by, Dr. Pereira, in his work on *Materia Medica*, is not satisfied with such terms as potassio-tartrate of antimony, potassio-tartrate of soda, &c. but must coin new ones; and he gives for the same, antimonio-tartrate of potash, sodio-tartrate of potash, &c.; thus adding to the confusion, which is already quite enough, without there appearing the slightest necessity, or the terms he proposes having any greater recommendation than those given by the College (if we are to have new ones).

Bury, Lancashire, July 1842.

## CASE OF CHOREA, WITH PARALYSIS.

*To the Editor of the Medical Gazette.*

SIR,

I HAVE extracted from my note-book the following account of a case of chorea, with paralysis of several of the voluntary muscles, which I met with about a year ago. The severity of the case, and the rapid improvement which followed the treatment put in force, may perhaps render it sufficiently interesting to merit a place in your journal.—I am, sir,

Your obedient servant,

JAMES TURNBULL, M.D.

Physician to the Dispensary of Wolverhampton.  
Wolverhampton, Aug. 10, 1842.

On the 14th of August, 1841, I was requested by the house-surgeon of the dispensary to visit a patient of the name of Pitt, who had come under his care affected with chorea. I found that the patient, who was a girl 14 years of age, of a pale complexion, and rather delicate constitution, had been seized about a month before with slight twitching or convulsive movements of the upper and lower extremities. For two or three weeks previous to the commencement of the disease, her health had been bad, and she had complained of general debility, of weakness, and pain in the lower extremities, and of giddiness, with pain in the back part of the head. The occurrence of the disease could not be traced to any other cause beyond this general derangement of the health. On first seeing her I found her in the following condition:—She was lying on her back, with nearly all the voluntary muscles in a state of paralysis, so that she was unable to stand or to raise herself from her bed, or even to feed herself. When her arms or legs were raised, she had no power to retain them in the position in which they were placed, so that they dropped down again; and when raised from her bed, she had not the least power to hold herself up. Her right arm was affected with a continual jerking motion, and frequently grasped her clothes. Her right leg was similarly affected, and when it hung over the side of the bed it was jerked forward. Her mouth and lower jaw were in constant motion, and her lips were frequently pushed out and drawn in.

Her eyes rolled about, and were often turned upwards. She was unable to articulate distinctly, but appeared perfectly sensible. The sensation of every part of the body seemed undiminished. She sighed frequently, but her countenance gave no indication of suffering. On examining the back of the neck, considerable tenderness was found to exist on pressing the spinous processes of the upper cervical vertebræ. Her pulse was 70; her skin moderately warm; her tongue white, slightly coated; there was considerable thirst; her bowels constipated. The catamenia had never appeared.

Eight leeches were directed to be applied to the nape of the neck, and the following pill and draught were prescribed:—

R Pil. Aloes Com. Pil. Hydrarg. aa. gr. iiss.; Ol. Succini, gtt. j. Ft. pilula una statim sumenda.

R Ol. Ricini, Ol. Terebinth. aa. ʒij.; Mist. Amygdalæ, ʒss.; Aquæ Menth. Pip. ʒj. Ft. haustus vespere sumendus.

15th.—The patient had passed a very restless night. The medicine had acted freely upon the bowels, and caused four dark-coloured stools. The leeches had removed the pain in the back part of the head and neck. On the whole there seemed to be some improvement; the countenance was more composed; the mouth was free from twitching motion; and she was able to answer questions distinctly. She was also able to stretch out her left arm a little, and to raise her legs slightly. The twitching motion, however, of the right arm continued as before; tongue rather cleaner; pulse 84, soft, and regular; skin cool.

The pill and draught to be repeated.

16th.—The patient was continuing to improve, and the power of motion returning. She was able to sit up on a chair, to raise herself forward, and to lift her arms and legs. Slight convulsive movements were still observed in the right arm and leg. She had now been a fortnight unable to walk. Her bowels had been opened three times by the pill and draught, and the stools were of a natural colour. The appetite was improving, and there was no tenderness on pressing the cervical vertebræ. The following pills and powders were prescribed:—

R Pil. Aloes Com. ʒij.; Assafœtida, ʒj.; Ol. Succini, q. s.; ft. Pil. xii. capiat j. omni nocte.

R Ferri Potassio Tart. gr. x.; Pul. Valerianæ; Pulv. Calumbæ, aa. gr. vi.; Ft. pulvis ter in die sumendus.

18th.—She was not so well this day, having caught cold in her left eye, the conjunctiva of which was red and inflamed. She was ordered to omit the powders for two days, and to take at night one of the pills first prescribed, and the following draught in the morning:—

R Infus. Sennæ com.; Infus. Gentianæ com. aa. ʒj.; Magnes. Sulph. ʒss.; Tinct. Cardom. com. ʒj.; Ft. Haustus.

19th.—The patient had become a little feverish; her skin was rather hot, and the pulse 96. The conjunctiva was more inflamed, and the eyelid swollen. She complained of heaviness, and a disposition to sleep. The power of motion, and the convulsive movements, continued as described on the 16th.

A blister to be applied to the nape of the neck, and an astringent collyrium to be used three times a day.

20th.—Her eye was less inflamed, and the heaviness and disposition to sleep had gone off.

21st.—She was much better, and her countenance had assumed a more healthy appearance. She was able now to walk a few steps, though she felt weak. Her tongue was clean, and her bowels open. She was directed to take the pills and powders prescribed on the 16th, and to have good diet, with a little exercise in the open air.

From this time she improved steadily, and by continuing the pills and powders for about a fortnight, she got quite well. On seeing her a few days ago, she informed me that she had not had any return of the disease.

This case is an example of the occurrence of chorea in connection with an inflammatory or congested state of the upper part of the spinal cord and its membranes, combined with, and probably caused by, a torpid state of the digestive organs. It also shows the extent to which paralysis may exist without organic disease of the brain or spinal cord.



## REMOVAL OF TUMORS.

*To the Editor of the Medical Gazette.*

SIR,

SEEING a notice in the last number of the *Lancet* on the subject of removing tumors without cutting (the method is not mentioned), reminds me of a method I have adopted in small encysted tumors, which is as follows:—Make an incision into the tumor, and discharge its contents; then cleanse out the cyst by means of lint and warm water, and, when thoroughly cleansed, fill the cyst with lint soaked in creosote, which must be removed daily at least, thoroughly cleansing the cyst each day, and inserting fresh lint soaked in creosote. Continuing this treatment for about a week, you will be able, by a pair of dissecting forceps, to remove a part of the cyst, placing the patient in a good light, so that you may be able to see into the cyst when it is dilated. It will most likely happen that the whole of the cyst cannot be removed at once: then the same treatment of cleansing and inserting lint dipped in creosote must be observed till the whole of the cyst has been removed; and when this has been accomplished, the part will collapse, and scarcely leave any mark. The only inconvenience, if it deserves the name, is, that the opening left after the parts have collapsed will from time to time require to have removed from it, by a blunt probe, any lint from the dress or dust that may have collected in it.

I should prefer, in all cases, to remove the cyst, when it is possible to do so; but to show that this is not absolutely necessary, I may mention that, in the year 1837, I treated a small encysted tumor, that was too deep-seated to be removed by the above means, merely by introducing lint dipped in creosote every day till there was no discharge. The patient has not felt any inconvenience; nor has there been any discharge from that time to the present.

A case in which the cyst was removed occurred in a gentleman who had a small tumor at the back of his neck. He shewed it to a late member of the Council of the College in 1838, who advised it should be allowed to remain till it got larger, and then be removed by the knife. In August

1840, it became inflamed, and very troublesome, though not larger than a small hazel-nut. I removed it by the above method; and the only mark left is as small as might be made by pressing the point of an Anel's probe on any soft part. In this case the parts have so completely collapsed that a probe cannot be passed more than one-tenth of an inch from the surface of the skin. I have regretted ever since that I did not preserve the parts of the cyst; but I examined them well at the time, and could plainly see which was the attached and which the free surface, so well had the creosote preserved them. The success of this method, it will be perceived, depends on the antiseptic and antisuppurative properties of creosote preserving the integrity of the parts.—I am, sir,

Your obedient servant,

G. ROBINSON.

10, Chapel-street, Grosvenor-sq.  
Aug. 8th, 1842.

## MEDICAL GAZETTE.

*Friday, September 2, 1842.*

"Licet omnibus, licet etiam mihi, dignitatem  
*Artis Medicæ* tueri; potestas modo veniendi in  
publicum sit, dicendi periculum non recuso."

CICERO.

## POOR LAW BILL.

THE Poor Law Continuance Bill has, as all our readers are aware, passed, and become the law of the land, and the Commissioners are appointed to continue their office for five years longer. The merits of the Bill, the advantages and disadvantages of the old system, as well as the improvements which have been attempted in the new one, we have repeatedly before made the subject of comment; and we do not, therefore, purpose going over this ground again. We are, however, told that, at the commencement of next session, it is the intention of government to introduce another bill, embracing all the modifications and amendments which, on a thorough reconsideration of the subject, may seem

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SEEING a notice in the last number of the *Lancet* on the subject of removing tumors without cutting (the method is not mentioned), reminds me of a method I have adopted in small encysted tumors, which is as follows:—Make an incision into the tumor, and discharge its contents; then cleanse out the cyst by means of lint and warm water, and, when thoroughly cleansed, fill the cyst with lint soaked in creosote, which must be removed daily at least, thoroughly cleansing the cyst each day, and inserting fresh lint soaked in creosote. Continuing this treatment for about a week, you will be able, by a pair of dissecting forceps, to remove a part of the cyst, placing the patient in a good light, so that you may be able to see into the cyst when it is dilated. It will most likely happen that the whole of the cyst cannot be removed at once: then the same treatment of cleansing and inserting lint dipped in creosote must be observed till the whole of the cyst has been removed; and when this has been accomplished, the part will collapse, and scarcely leave any mark. The only inconvenience, if it deserves the name, is, that the opening left after the parts have collapsed will from time to time require to have removed from it, by a blunt probe, any lint from the dress or dust that may have collected in it.

I should prefer, in all cases, to remove the cyst, when it is possible to do so; but to show that this is not absolutely necessary, I may mention that, in the year 1837, I treated a small encysted tumor, that was too deep-seated to be removed by the above means, merely by introducing lint dipped in creosote every day till there was no discharge. The patient has not felt any inconvenience; nor has there been any discharge from that time to the present.

A case in which the cyst was removed occurred in a gentleman who had a small tumor at the back of his neck. He shewed it to a late member of the Council of the College in 1838, who advised it should be allowed to remain till it got larger, and then be removed by the knife. In August

1840, it became inflamed, and very troublesome, though not larger than a small hazel-nut. I removed it by the above method; and the only mark left is as small as might be made by pressing the point of an Anel's probe on any soft part. In this case the parts have so completely collapsed that a probe cannot be passed more than one-tenth of an inch from the surface of the skin. I have regretted ever since that I did not preserve the parts of the cyst; but I examined them well at the time, and could plainly see which was the attached and which the free surface, so well had the creosote preserved them. The success of this method, it will be perceived, depends on the antiseptic and antisympurative properties of creosote preserving the integrity of the parts.—I am, sir,

Your obedient servant,

G. ROBINSON.

10, Chapel-street, Grosvenor-sq.  
Aug. 8th, 1842.

## MEDICAL GAZETTE.

*Friday, September 2, 1842.*

*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*

CICERO.

## POOR LAW BILL.

THE Poor Law Continuance Bill has, as all our readers are aware, passed, and become the law of the land, and the Commissioners are appointed to continue their office for five years longer. The merits of the Bill, the advantages and disadvantages of the old system, as well as the improvements which have been attempted in the new one, we have repeatedly before made the subject of comment; and we do not, therefore, purpose going over this ground again. We are, however, told that, at the commencement of next session, it is the intention of government to introduce another bill, embracing all the modifications and amendments which, on a thorough reconsideration of the subject, may seem

expedient. We are promised that this is one of the topics which is to engage the attention of ministers during the recess, and that it will be brought forward in a matured and well-digested form at the conclusion of it.

We should, perhaps, under the circumstances, be hardly justified in expecting any great amelioration of our position from the introduction of this further bill; yet we cannot but anticipate that some good may be the result of further discussion of the subject. Some improvement has, indeed, been effected by the recent amendment bill, though it has by no means placed us in the position we could desire; for, notwithstanding the increased rates of payment which have been ceded in some instances, the remuneration to the practitioner for the labour of attending on the poor is far too small: in many cases, it is absurdly so. The system on which the regulation of it is conducted is often highly improper. They do not even profess to recompense the medical man for his trouble, but endeavour to make the attendance on the poor a sort of accompaniment to general practice, and enforce compliance with their terms, by threatening to introduce a new-comer in case of refusal. The object seems to be, to drive the bargain as close as possible, to get the work done as cheaply as may be, without much regard to the manner in which it is carried out. Surely, this mode of trafficking with the lives and interests of our fellow-creatures is not quite in accordance with the enlightened spirit of the age.

It seems as if the medical man were expected to be a complete devotee to humanity; to practise his profession for the sole purpose of benefiting the public, without reference to his own interest; and all complaints on his part, about insufficient remuneration, are regarded as marks of sordid dis-

content. This may sound very well to the speculative philosopher, in whose mind the thought of filthy lucre gains no entrance; but such philanthropical notions will form but a poor substitute to the practitioner for the ordinary necessities of life. In practising his profession he has a two-fold object, and whilst occupied in promoting the interests of his brethren, it is not to be supposed that he will be entirely negligent of his own. It is by no means derogatory to him to suppose that emolument has a share of his consideration. And though it be to the honour of the profession that so much benefit is gratuitously conferred upon the public by its members, this must not be placed as an excuse for grinding down the practitioner to the lowest rate of charges, when a public appointment is made the object of consideration. This system of driving cheap bargains, upon which the Poor-Law Guardians too frequently congratulate themselves, is most nefarious, and, of course, is indirectly injurious to the poor, as it is immediately hurtful to the medical man; for if he be ill paid, it cannot be supposed that so much of his time and attention will be bestowed upon the sick as might be desired.

It is not simply for his attendance on the patients that the medical man has to be remunerated by the Poor-Law officers; the labours which are required of him do not cease here. He is expected to keep books, and make frequent returns of the condition, progress, and treatment of patients under his care, at such a length as to occupy a very large portion of his time. For what good reason all this labour is given, we must suppose the Commissioners best know. At any rate, they should enable the practitioner to keep an amanuensis, if they deem it important to be thus precise. So great

a demand is made, that it is rarely complied with. Indeed, to fulfil all the expectations of the Commissioners, would alone occupy the whole time of a medical man who undertakes a moderately extensive circuit. He need do nothing else, but give himself up entirely to it; and the recompense which is offered for all this labour and trouble amounts, often, to no more than forty or fifty pounds: in many instances it is much less.

In the internal management of Union houses, many complaints have reached us, from various quarters; and there are, undoubtedly, many circumstances demanding attention and improvement. This, one would imagine, might best be effected by the representation of each medical man to the Board of Guardians with which he is connected. It is, unfortunately, too often to be regretted, that these gentlemen are not sufficiently willing to attend to the statements and advice of a medical man: nevertheless, we are inclined to hope that improvement in this respect is progressive; and we know that much good has, in many houses, been effected by the acquiescence of the guardians in the opinions of the practitioner. There is, however, much difference, in this respect, in the management of the several Union houses. In some, the means of accommodation and comfort which are essential to the recovery of the sick are not afforded; no nurses are provided, and the patients are left to the tender mercies of an ordinary attendant, who often undoes all that the medical man is endeavouring to effect.

We have heard it remarked more than once, that no small inconvenience, and much loss of time, is occasioned from the want of dispensaries in the Union houses. Persons are running to and fro for medicine, and, in cases of emergency, this becomes a serious evil.

This, of course, would all be prevented by keeping certain drugs in the house, and the medical man, having gone his rounds, would only have to prescribe for his patients, or compound the medicines on the spot. How far such an alteration might be expedient, it is difficult to say. There would, no doubt, be some inconvenience attending it. It would be one step towards converting the Union house into a hospital, and, so far, rendering it more serviceable in the treatment of patients. Such, however, is not the prime object of the Poor Law, and we doubt whether the Commissioners and Guardians might not think that such an alteration would carry them a little beyond the line of necessity, which they are not generally over anxious to exceed.

There are many other things, with regard to the management of the sick in Unions, which require improvement; but these, for the most part, suggest themselves to each individual practitioner, and are better, if possible, rectified by him, inasmuch as, at the present time, we cannot expect these subjects to be made topics of consideration by the legislature. We shall wait anxiously for the amendments which are to be brought forward in the next session; when we hope that a fair and impartial consideration will be given to the subject, and that the framers of any fresh propositions will not suffer their minds to be biassed by the representations of persons who hold office under the present bill.

## APOTHECARIES' HALL.

### PRIZE QUESTIONS.

#### BOTANY,

*Examination Paper, August 3, 1842.*

Hours from 11 A.M. till 9 P.M.

1. State the views of Liebig respecting the nutrition of plants.
2. State the uses of the leaves.
3. Describe the structure and uses of the



bark, and mention instances in which the bark may be supposed to exercise the functions of leaves.

4. How do physiologists account for the ascending direction of the fruit of *Convolvulus sepium*, and for the descending direction of the fruit of *Conv. arvensis* and *C. major*?

5. Describe the structure of the pistil.

6. Describe the structure of the ovulum before and after fecundation.

7. Mention any cases in which it is necessary to examine the ovary, in order to understand the nature of the ripe fruit.

8. Describe the structure of the fruit in Cucurbitaceæ.

9. Describe the structure and give examples of the following fruits, viz.:—achenium, folliculus, legumen, lomentum, caryopsis, pyxidium, bacca, pomum.

10. Describe the successive formation of parts in the fruit of Leguminosæ.

11. Define the following terms, viz.:—farinosus, lepidotus, ramentaceus, squamosus, paleaceus, nervosus, costatus, trinervis, triplinervis.

12. Give examples in proof of the theory of floral organs being derived from modifications of leaves.

13. Give the essential characters of the primary divisions of plants, according to natural affinities.

14. It is said that plants exhibit a corresponding agreement in structure and medicinal or chemical properties: are there any orders which offer no exception to this rule?

15. Give the essential characters of the following natural orders, and state the most important articles of the *Materia Medica* which are furnished by each order:—Ranunculaceæ, Umbelliferae, Cucurbitaceæ, Violaceæ, Euphorbiaceæ, Polygonaceæ, Scrophulariaceæ, Solanaceæ, Coniferae, Melanthaceæ, Liliaceæ, Smilacaceæ.

16. Describe, in Latin, the plants numbered 1 to 6; state their natural orders and probable sensible properties.

N. B. WARD.

The plants were—

1. *Alstroemeria psittacina*.
2. *Colutea cruenta*.
3. *Cephalanthus occidentalis*.
4. *Cissus orientalis*.
5. *Combrétum purpureum*.
6. *Oncidium flexuosum*.

## EVOLUTION OF LIGHT IN THE HUMAN SUBJECT\*.

“It was ten days previous to L. A.’s death that I observed a very extraordinary light,

which seemed darting about the face, and illuminating all around her head, flashing very much like an aurora borealis. She was in a deep decline, and had that day been seized with suffocation, which teased her much for an hour, and made her so nervous that she would not suffer me to leave her for a moment, that I might raise her up quickly in case of a return of this painful sensation. After she settled for the night, I lay down beside her, and it was then this luminous appearance suddenly commenced. Her maid was sitting up beside the bed, and I whispered to her to shade the light, as it would awaken Louisa. She told me the light was perfectly shaded. I then said, ‘What can this light be which is flashing on Miss Louisa’s face?’ The maid looked very mysterious, and informed me she had seen that light before, and it was from no candle. I then inquired when she had perceived it; she said that morning, and it had dazzled her eyes, but she had said nothing about it, as ladies always considered servants superstitious. However, after watching it myself half an hour, I got up, and saw that the candle was in a position from which this peculiar light could not have come, nor, indeed, was it like that sort of light; it was more silvery, like the reflection of moonlight on water. I watched it more than an hour, when it disappeared.” It gave the face the look of being *painted white* and *highly glazed*, but it danced about, and had a very extraordinary effect. Three nights after, the maid being ill, I sat up all night, and again I saw this luminous appearance, when there was no candle nor moon, nor, in fact, any visible means of producing it. Her sister came into the room, and saw it also. The evening before L. A. died, I saw the light again, but it was fainter, and lasted but about twenty minutes. The state of the body of the patient was that of extreme exhaustion. For two months she had never sat up in the bed. Many of her symptoms varied much from those of other sufferers in pulmonary complaints whom I had seen, but the general outline was the same. Her breath had a very peculiar smell, which made me suppose there might be some *decomposition* going forward.”

The young lady about whose person these luminous appearances were manifested, I had seen several times before her return to the country; her lungs were extensively diseased; she laboured under the most hopeless form of pulmonary consumption.

Extraordinary as the foregoing case may appear, it is not without parallel. A few months since, I was in attendance upon a young lady who was in the last stage of pulmonary consumption. She had read in the newspapers a brief notice of the communica-

\* Sir Henry Marsh’s Essay on the Evolution of Light in the Human Subject.

tion which I had, a short time previously, brought before the College of Physicians, upon the evolution of light in the living human subject; and feeling deeply interested in so remarkable a phenomenon, had, more than once during my visits, directed her conversation to that subject. It is no less remarkable that she should in her own person have subsequently exhibited the very same phenomena. The following statement I received from her sister:—

“About an hour and a half before my dear sister’s death, we were struck by a luminous appearance proceeding from her head in a diagonal direction. She was at the time in a half-recumbent position, and perfectly tranquil. The light was pale as the moon, but quite evident to mamma, myself, and sister, who were watching over her at the time. One of us first thought it was lightning, till shortly after we fancied we perceived a sort of tremulous glimmer playing around the head of the bed; and then recollecting we had read of something of a similar nature having been observed previous to dissolution, we had candles brought into the room, fearing our dear sister would perceive it, and that it might disturb the tranquillity of her last moments.” — *Dublin Journal of Medical Science.*

### ROYAL COLLEGE OF SURGEONS.

#### LIST OF GENTLEMEN ADMITTED MEMBERS.

*Friday, August 26, 1842.*

J. Wickham.—R. Morrah.—J. P. Dickson.—  
W. H. Addison.—G. Birkett.—H. Morgan.—  
W. A. Leslie.—W. B. Keech.—G. Henderson.

*Monday, August 29, 1842.*

R. P. Chapman.—J. D. Allen.

### APOTHECARIES’ HALL.

#### LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

*Thursday, Aug. 25, 1842.*

T. Loy, Stokesley.—F. Boase, Penzance.—C. R. Jones.—G. H. Mantell, Farringdon.—J. Miller.

### RECEIVED FOR REVIEW.

Dr. Wetzlar’s Description of the Mineral Springs of Aix-la-Chapelle and Borcette.

Mr. Alexander King’s Remarks on Amputation.

Dr. Franz’s Treatise on Mineral Waters, with particular reference to those prepared at the Royal German Spa, Brighton.

Mr. Parnell’s Elements of Chemical Analysis, Inorganic and Organic.

Mr. Coulson on Diseases of the Bladder and Prostate Gland. Third Edition.

Methodus Medendi; or, the Description and Treatment of the Principal Diseases incident to the Human Frame. By H. M’Cormac, M.D. Consulting Physician to the Belfast Hospital, &c.

### A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, August 20, 1842.

Small Pox .....	13
Measles .....	25
Scarlatina .....	43
Hooping Cough .....	6
Croup .....	7
Thrush .....	6
Diarrhoea .....	70
Dysentery .....	2
Cholera .....	29
Influenza .....	3
Typhus .....	26
Erysipelas .....	1
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	144
Diseases of the Lungs and other Organs of Respiration .....	22
Diseases of the Heart and Blood-vessels ....	23
Diseases of the Stomach, Liver, and other Organs of Digestion .....	121
Diseases of the Kidneys, &c.....	11
Childbed .....	8
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	1
Diseases of Joints, &c. ....	2
Ulcer .....	1
Fistula .....	1
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	113
Old Age or Natural Decay.....	52
Deaths by Violence, Privation, or Intemperance .....	17
Causes not specified .....	1

Deaths from all Causes ....., 959

### METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

August.	THERMOMETER.		BAROMETER.	
Wednesday 24	from 49 to 73		29.84 to 29.76	
Thursday . 25	55	69	29.70	29.73
Friday . . . 26	60	71	29.79	Stat.
Saturday . 27	56	71	29.91	29.93
Sunday . . . 28	58	70	29.95	29.97
Monday . . . 29	56	69	29.96	29.92
Tuesday . 30	59	99	29.95	29.96

Wind, N.W. and N. on the 24th, N.E. and N. from the 25th to the evening of the 29th, since very variable.

The 24th, generally clear. 25th, thunder and lightning about 4 A.M., and from half past 6 to 7 P.M. clear about noon. 26th, generally clear. 27th, morning cloudy, afternoon clear. 28th, generally clear, except the morning; lightning in the S.E. in the evening. 29th, morning rain, noon clear, afternoon cloudy; thunder and lightning from half past 6 to quarter past seven in the evening. 30th, generally cloudy.

Rain fallen, .725 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BEING A  
WEEKLY JOURNAL  
OF

Medicine and the Collateral Sciences.

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FRIDAY, SEPTEMBER 9, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Chicken-Pox. Measles. Scarlet Fever.*

I must not omit a short notice of the disorder called *chicken-pox*; for although a very unimportant complaint, it has given rise to many disputes. Other names which it has borne are *varicella*, *crystalli*, *variola pusillæ*.

Connected with the small-pox, and arising from the same contagion, there are several forms of eruptive disease. I mentioned the chief of them in the last lecture, as varieties of *modified* small-pox. Now these mild and irregular forms of *variola*, both parents and medical men, wishing, I suppose, to believe nothing in disparagement of the protecting power of vaccination, are very apt to consider, and to call, *chicken-pox*: and this error having been discovered, some persons have rushed to, or rather revived, the opposite opinion—equally erroneous in my judgment—that there is no such substantial disorder as *chicken-pox*; but that all the eruptions which have passed under that name have really been forms of *modified* small-pox. Dr. John Thomson, of Edinburgh, is one of the stoutest maintainers of this doctrine. No doubt an eruption of short duration, and vesicular through the greater part of its progress, is often caused, especially in persons who have been vaccinated, by the contagion of small-pox; but a similar eruption proceeds also from another distinct contagion, that, namely, of *chicken-pox*.

The best description of the true *chicken-pox* that I am acquainted with has been given by Dr. Gregory. The disorder is

almost peculiar to infants, and children of tender years. Willan has, however, described one unambiguous example of it, in a gentleman thirty years old; and another genuine instance was seen by Dr. Gregory, at the Small-Pox Hospital, in the person of an adult female. The eruption is preceded by little or no premonitory fever, commencing usually on the shoulders, neck, and breast, affecting almost always the scalp, but sparing very much the face—which, in small-pox, never escapes.

The eruption is composed, from the very first, of perfectly transparent vesicles, surrounded by a very slight degree of superficial redness. They are usually numerous, but distinct. Dr. Gregory says that when the eruption is very copious, the body has the appearance of having been exposed to a shower of boiling water, each drop of which had occasioned a minute blister. Crops of vesicles appear in succession for two or three days; and while new ones are forming, the first are beginning to shrivel. The vesicles that remain after the second or third day become slightly opaque, and like pearls. When irritated by friction, they sometimes take on so much inflammation as to be converted into pustules. The scabs are small and gummy, dry quickly, and crumble off, instead of being detached in one mass. In a few instances, shallow cicatrices are left by the vesicles. During the short progress of this eruptive disease there is no constitutional disturbance of any consequence.

It has been ascertained of this genuine *chicken-pox*, or *varicella lymphatica*, that it occurs once only to the same person; that it spreads by contagion; that, nevertheless, it is not communicable by inoculation—whereas the matter of *modified* small-pox, when engrafted, produces genuine *variola*; that it occurs equally among those who have, and those who have not, been vaccinated; that its course is not affected by antecedent vaccination; and that the vaccine vesicle and disease proceed with

perfect regularity after the occurrence of chicken-pox. Now this never happens after small-pox.

It appears, from Möhl's work *De Varioloidibus et Varicellis*, that from the year 1809 to 1823, chicken-pox was annually observed at Copenhagen without concomitant whose labours I have already alluded to, small-pox; and that both diseases have since prevailed at intervals epidemically, but always under circumstances which satisfied the physicians of the town that their sources were distinct.

It must therefore, I think, be admitted, that there is a separate disease, called chicken-pox, which springs from a specific poison; produces a vesicular eruption; runs a definite course; has no tendency, when undisturbed, to suppuration; occurs but once; and affords no protection against small-pox, while, on the other hand, small-pox affords no protection against it.

The main point of practical importance is, however, this; that if we meet with any eruption which is at all equivocal, we should use the same precautionary measures for preventing the extension of the disease as if we were sure that it was modified small-pox. But this salutary rule is often, I say, neglected or infringed, to the danger and detriment of those unprotected persons who happen to be in the vicinity of the sick child.

The treatment required in chicken-pox is abundantly simple; it is the same, in fact, which has been already recommended for the mildest cases of the discrete small-pox.

Another of these blood diseases is *the measles*; called, also, by nosologists, *rubeola*, and *morbilli*.

Like different human faces, all the complaints belonging to this group have the same set of features, and therefore a mutual resemblance, while the separate features differ so much in their character and circumstances, as to give to each disease its distinctive aspect. There are also minor shades of difference between individual cases of the same specific malady.

Measles, accordingly, has its introductory fever, its period of eruption, its peculiar kind of eruption, its course by stages. It is communicable from person to person, and it generally occurs but once to the same person. On some of these points I spoke before.

The introductory fever is sometimes severe, and nearer in its type to synocha than to typhus. Like all fevers, it begins with lassitude, and shivering, which is soon followed by heat of skin, acceleration of the pulse, anorexia, and thirst. But the peculiarity in the fever which precedes the eruption of measles is, that it is very constantly attended with an inflammatory condition of

the mucous membranes; especially of those which are proper to the air-passages. The eyes become vascular and watery, the eyelids heavy, turgid, and red. The membrane which lines the nasal cavities, the fauces, the larynx, trachea, and bronchial tubes, is affected. Hence we have, generally, as symptoms, much sneezing, as well as lachrymation, a copious defluxion from the nostrils, soreness of the throat, and an obvious redness of the fauces, and most commonly a dry, hoarse, peculiar cough. In short, the symptoms which usher in an attack of measles are the symptoms of coryza and catarrh. In some instances there is diarrhoea also, indicating a simultaneous affection of the mucous membrane of the intestines; and not unfrequently vomiting: but the vomiting, as in small-pox, ceases upon the coming out of the eruption.

The regular period for the appearance of the eruption is the fourth day of the disease; seldom earlier, frequently later: sometimes as late as the eighth or tenth day from the commencement of the catarrh. The eruption itself is a rash, consisting, at first, of minute papulæ, which, as they multiply, coalesce into blotches that have, more or less, a horse-shoe or crescentic shape, and leave the intermediate portions of skin of their natural colour. It is two or three days in coming out, beginning on the face, neck, and arms, then reaching the trunk of the body, and so travelling down to the lower extremities. In this course it resembles the eruption of small-pox. It fades in the same order, standing out three days at least on the face before it begins to decline; so that its whole duration comprises a space of six or seven days. It becomes browner as it fades. You may feel that it is slightly elevated above the general surface of the skin, especially upon the face, which is somewhat bloated and swollen. The parts which the rash has recently occupied are left covered with a dry, small, scurf. The cuticle does not peel off in large flakes, as I shall have to tell you that it oftentimes does in scarlet fever, but a great part of it crumbles away in a fine branny powder. Occasionally, yet very seldom I believe, the rash is intermixed with a few small and short-lived vesicles.

This termination of the papulæ is very unlike what happens in variola: and connected with the eruption there are two other important particulars in which the measles differ essentially from the small-pox. In the first place, the fever does not cease, nor even abate, upon the emergence of the eruption; but sometimes increases in intensity. And in the second place, the disorder is not more severe, nor more dangerous, because the eruption is plentiful, or early. So far from it, indeed, that in some of the worst

and most perilous cases the eruption is apt to be partial, and to appear late and irregularly.

The eruption is the *distinguishing* feature of measles, but the catarrhal affection is, in every way, the *most important*. Indeed the rash may, and sometimes does, happen without the fever and the catarrh; and nosologists recognize a variety of the disorder under the title of *rubeola sine catarrho*. But it is observed of this variety, that it confers no protection whatever against the recurrence of the malady: in truth, it is most commonly succeeded in a few days by an attack of measles in its regular and complete form.

I need not stop to repeat what I told you in a former lecture about the other general features of this eruptive complaint. The period of incubation is from ten days to a fortnight. The contagion is active enough, though certainly it is less strong and diffusive than that of small-pox. When once introduced into a family or school, the disease rapidly spreads to those individuals who have not already had it. It is capable, though with much less readiness and certainty than small-pox, of being propagated by inoculation; but as the disorder is not rendered milder by being so introduced into the system, this process has no utility or interest, and is never resorted to. Occasionally rubeola visits the same individual twice; but this is the exception to the general rule. Perhaps, in some reputed instances of its recurrence, the first accession may have been without fever and catarrh, and therefore an ineffectual safeguard for the future.

The measles resembles the other diseases of the group in this also, that at times it pervades a community as an epidemic; at times occurs here and there only, sporadically. The general character of the symptoms varies considerably in different epidemics. Morton and Sydenham, and after them Sir William Watson, have described visitations of what they call *putrid* measles. Sir William Watson was physician to the Foundling Hospital, and he witnessed two epidemics of this putrid kind among the children in that institution. He states that the eruption appeared unusually early, so early as the second day of the disease; and that, besides cough and dyspnoea, the complaint was marked by extreme debility, and attended with dysenteric diarrhoea. More seemed to die of the intestinal affection than of the pectoral. He lost, in one of these epidemics, nineteen out of one hundred and eighty-three patients. The malignant character of the disorder was manifested by the frequent occurrence of gangrene, both externally and internally. In this more typhoid variety of measles, the rash is often irregularly and imperfectly developed, and of a livid colour

Sydenham found that measles of an unusually bad kind prevailed in London in the year 1670 and 1674; the very same years in which small-pox was also remarkably malignant and fatal. This illustrates what I have stated before; viz. that the typhoid tendencies of these and other febrile disorders depend less upon any peculiar virulence in their *exciting* causes, than upon some change previously effected in the human body by the silent and gradual influence of certain *predisposing* causes.

The diagnosis of measles is seldom difficult. In the outset of the fever you may guess what is coming by the coryza, catarrh, and hoarse cough; especially if the disease be about. On the very first day of the eruption, the small red and hitherto separate spots are very like the incipient pimples of small-pox. Do not, therefore, at this period, express too confidently your opinion respecting the nature of the complaint. Parents and nurses might be uncharitable enough to attribute your mistake to inexperience or ignorance. The progress of the disease will soon remove all doubt. The eruption of small-pox presently exhibits some fluid, while that of measles has none—unless, indeed (what is very uncommon), a few miliary vesicles mix themselves with it. But these make no advance in twenty-four hours. Ordinarily the isolated pimples visible upon the first day soon augment in number, and collect themselves into semicircular groups; and if any question at all arises, it is whether the disease be measles or scarlet fever. I shall presently describe the latter disease; and then I will point out the marks of distinction between the two.

The prognosis in measles is governed chiefly by the mildness or the severity of the pectoral symptoms. The most common cause of death, in the fatal cases, is inflammation of some one or more of the textures that compose the lungs. And even when this immediate danger has passed by, the disease too often leaves chronic pulmonary mischief behind it. In scrofulous children, and young persons, it frequently awakens the slumbering germs of consumption. And when that specific effect is not produced, it is apt, in adults, to inflict upon the constitution a blow which is never thoroughly recovered from; the patient becoming, from that time forwards, delicate and valetudinary. The prognosis is always unfavourable when the eruption does not stand out well, is of a livid colour, and accompanied with typhoid symptoms, or with a disposition to gangrene.

We augur favourably of the case when the thoracic symptoms are not severe; when the fever moderates upon the coming out of the rash; and when the rash is steadily persistent, and there is no excessive prostration of the strength.

Being contagious, and occurring for the



most part but once, measles is principally seen in children; although no period of life is exempt from its attacks. In many children the disorder is so slight as to require little more than judicious domestic attentions. The free application of cold air to the surface, which is so beneficial in small-pox, would in measles be unsafe, on account of the pectoral symptoms. For this reason the patient should be kept in bed; with no more clothes, however, or warmth of the apartment, than he is accustomed to in health. The antiphlogistic regimen must be adopted; and if the bowels are not quite open naturally, gentle laxatives should be given. It may be well, also, to prescribe some diaphoretic medicine; a draught, for example, containing two or three drachms of the *liquor ammoniæ acetatis*, with half a drachm of the *spiritus ætheris nitrici*, and an ounce of camphor julep, to be taken three or four times in the twenty-four hours.

The most important part, however, of the treatment relates to the remedies to be employed for the pulmonary symptoms, which depend, almost always, upon bronchitis. Occasionally we find, after death, some portions of the lungs hepatized; usually small portions. But, for the most part, it is extensive inflammation of the bronchial mucous membrane that we have to dread. And really I cannot give you any better or fuller directions in respect to the management of this inflammatory affection, than I endeavoured to lay down when I was speaking of *bronchitis* as it occurs idiopathically. You will judge of the extent and severity of the inflammation, partly by the common symptoms, partly by the help of your ear; and you must apportion your remedies to that intensity, so judged of. You will take blood from the arm, or from the chest, apply a blister, and give tartar emetic. And it is of importance that whatever kind or amount of depletion is adopted, it should be resorted to *early*.

When the rash is about to decline, a spontaneous diarrhoea often sets in, and appears to have a beneficial effect in abating the febrile symptoms. If this natural curative process should fail to occur, it may be imitated by the exhibition of gentle aperients.

In weakly children blisters are apt to cause troublesome sores; and in some epidemics of measles, the sores thus produced show a disposition to become gangrenous. When any such tendency is noticed, blisters had better be avoided altogether. At other times, the inconvenience to be apprehended from a blister may be prevented by one of two plans; either by interposing a piece of silver paper between the blistering plaster and the skin; or by suffering the blister to remain upon the part three or four hours only, then taking it off, and applying a poultice. The cuticle will rise under the

poultice, and the sore will not, in general, be a troublesome one.

If the eruption disappears prematurely, it may sometimes be restored by putting the patient into a warm bath. And if he is, at the same time, in a low state, especially if typhoid symptoms threaten or show themselves, you must treat the case, upon that indication, just as you would in continued fever; giving wine and support, with great caution and watching of their effects.

It is of considerable importance to protect the patient from danger *after* the disease has subsided; by warm clothing, by preventing him from going out of doors too early, or being in any way exposed to cold. Pneumonic inflammation, and dysenteric purging, are frequent consequences of the want of prudence in this respect.

I proceed, in the next place, to the consideration of *scarlet fever*.

This also is a contagious febrile disease, attended almost always, during a part of its course, by a rash, and by *sore throat*. It seldom comes on a second time.

There are some distinct varieties of this disorder, concerning which it is necessary that I should say a few words.

The two striking and important features of the disease are the *affection of the throat*, and the *affection of the skin*. They may both be well marked; or only one of them may be well marked: and this circumstance has led nosologists to divide one and the same complaint into two independent maladies; to which Cullen and others have assigned the respective names of *cynanche maligna*, and *scarlatina*. When, in an earlier part of the course, I was treating of the diseases of the throat, I purposely avoided the *cynanche maligna*; because that is only another name for a particular form of scarlet fever. If you look to Cullen's definitions of these complaints, you will see how very much alike they are. They both specify inflammation of the fauces, a cutaneous rash, and fever. But in the definition of *scarlatina*, the rash is dwelt upon and described, and the fever is called *synocha*; while in that of *cynanche maligna* the ulceration of the throat is more insisted on, and the fever is said to be typhoid. The truth is, that these two kinds of disorder both spring from the same contagious poison. The malignant sore throat may be caught from a patient who has mild scarlet fever; and mild scarlet fever may, in like manner, be contracted from one who is labouring under the malignant sore throat. The two forms graduate insensibly, in different cases, towards each other; and it would be impossible, even if it were desirable, to draw any strict line of separation between them.

For convenience, however, of description,

and for the better direction of the treatment, authors generally make three *varieties* of scarlatina. *Scarlatina simplex*, in which there is a florid rash, and little or no affection of the throat; *scarlatina anginosa*, in which both the skin and the throat are decidedly implicated; and *scarlatina maligna*, in which the stress of the disease falls upon the throat.

I need scarcely remind you of a sort of mystification which prevails among the public about this complaint, and which many practitioners, for no good reason that I can see, seem disposed to encourage. Mistaking the Latin and scientific name of the disorder for a mere *diminutive*, you will hear mamma say, "Oh, my children have not got the *scarlet fever*, but only the *scarlatina*." I always disabuse them of this absurd error, when the opportunity of doing so occurs. It can produce nothing but confusion, and a disregard of requisite precautions.

Like measles, and for the same reasons, scarlet fever, though persons of all ages are susceptible of it, is eminently a disease of children; but it is much more to be dreaded than the measles.

It is somewhat strange that scarlet fever was not recognized, in this country at least, as a distinct disease, till about two centuries ago. In all probability it had long existed, and had been always confounded with the measles. Morton speaks of it under the name of *morbilli confluentes*; and Hoffman calls it, by a similar mistake, *rubeola rosalia*. The *febris scarlatina* described by Sydenham must have been of a very mild kind; for he does not mention any ulceration of the throat. Dr. Fothergill, in 1748, was the first to describe, as a new and separate disease, that perilous form of the complaint which Cullen designates *cynanche maligna*; and it was long called the Fothergill sore throat. The identity of this affection with genuine scarlet fever has been slowly established by subsequent observers. The characteristic differences between scarlet fever and measles were first fully pointed out by Dr. Withering.

The disease begins, as the exanthemata in general begin, and as continued fever which I have grouped with them is apt to begin, with shivering; lassitude, and rapidly augmenting debility; headache, frequently severe; sometimes with delirium; occasionally with nausea and vomiting. Then, generally on the second day (and Cullen is wrong when he says it is generally on the fourth), the eruption begins to come out. In some of the worst forms of the disease it may, indeed, be deferred till the fourth day.

Although scarlet fever and measles were so long confounded together, the differences between them, when once pointed out, are

well pronounced, and easily enough recognized.

Rubeola is distinguishable, then, from scarlatina—

1. By the presence, at the outset, of catarrhal symptoms—by the sneezing, the cough, the defluxion from the eyes and nose, which precede the rash. There is, doubtless, in many cases of scarlatina, a running from the eyes and nose, but not till late in the disease; at any rate not prior to the eruption.

2. By the absence of severe inflammation and ulceration of the throat; symptoms which always accompany severe cases, at least, of scarlet fever.

3. By the characters of the eruption itself. The rash in measles is more elevated above the surface than in scarlatina, and of a darker colour. In measles it is said to present somewhat the tint of a raspberry, and in scarlet fever to be that of a boiled lobster. In measles the papulæ are collected into semilunar clusters, leaving interstices between them of healthy skin. The redness of scarlatina commences in minute red points, which speedily become so numerous and crowded, that the surface appears to be universally red. They begin on the face, neck, and breast, and extend to the extremities, pervading at last every part of the skin. The scarlet colour is deepest, in general, about the groins, and in the flexures of the joints, than elsewhere. Lastly, the rash of measles, in its most regular form, appears on the fourth day of the disease; that of scarlet fever on the second.

On the arms and legs the eruption of scarlatina occasionally differs somewhat from that which is visible on the trunk; is more spotty, more papular, and the papulæ are somewhat prominent, while over the body there is a general diffused blush.

In some cases of scarlet fever (probably in some epidemics, for I observed the phenomena I am about to mention in four or five cases in succession which were brought into the Middlesex Hospital within the space of a month or six weeks), some parts of the red surface are closely studded with little transparent vesicles, containing a thin colourless liquid, and resembling what I described to you before as *sudamina*. In all the instances in which I have seen them, these minute vesicles have been most thickly set on the thorax, and on the front and sides of the neck. The liquid is soon reabsorbed, and the cuticle under which it had been enclosed shrivels up, turns white, and comes off in a thick white scurf: so that the part from which it separates looks at first sight as if it had been powdered. I have recently seen two cases of this vesicular form of scarlatina in private practice. I shew you Rayer's delineation of the vesicles.

The eruption, in the most regular and favourable cases, stands out for three or four days, and then begins to fade and decline, becoming by degrees indistinct, and disappearing altogether, in the majority of instances, before the end of the seventh day. About this time desquamation of the cuticle begins to take place, in smaller scurf or scales from the face and body, in large flakes frequently from the extremities. The scarf-skin of the hands and of the feet sometimes separates almost entire. A glove or a slipper of cuticle comes away at once. You may see such things in most museums.

In that variety of the disorder which we call *scarlatina maligna*, the rash is apt to come out late, and imperfectly, and sometimes not at all; and instead of being bright and florid, to present a bluish or livid tint. Sometimes it suddenly recedes; and then, perhaps, appears again: and occasionally it is diversified by purple spots.

Willan and Bateman have given the name of *roseola* to an eruption which is also attended with inflammation of the throat, and between which and scarlatina it is certainly difficult, if not impossible, at first to discriminate. The *roseola*, however, is not contagious, and has more of a chronic character than scarlatina. It comes and goes, and has no settled or definite course. Dr. A. T. Thomson lays down *this* distinction between them; but I do not know that we can trust to it:—"In scarlatina (he says) the rash first attacks the face, and then extends to the trunk of the body, passing off by the extremities; whereas in *roseola* the extremities are *first* affected."

The appearances of the *tongue* in scarlet fever are also peculiar and characteristic. In the *scarlatina simplex*, and *anginosa*, it is often covered, at the outset, with a thick, white, cream-like fur, through which are seen projecting the red and exaggerated papillæ; the edges of the tongue being likewise of a bright-red colour. The red points gradually multiply, and the white fur clears away, and at length the whole surface of the tongue becomes preternaturally red, and clean, and raw-looking: and after becoming thus clean, as well as red and rough, and like a strawberry, it will sometimes, when the disease goes on unpromisingly, get dry, and hard, and brown—as you know it is apt to be in certain forms and stages of continued fever.

The first thing of which the feverish patient usually complains is sore throat, with some stiffness of the neck: and if you inspect the fauces, you will see, without in general so much swelling of the tonsils as occurs in common quinsy, a diffused redness, sometimes of a dark-claret colour, including a large part of the palate. In a

short time you may perceive that the tonsils and velum are covered irregularly with whitish exudations, or grey aphthous crusts: or, perhaps, you see a sloughy kind of ulceration left by the separation of these crusts.

The progress of the disease, and its degree of severity and of danger, differ very greatly in different cases. Sometimes the deviation from the feelings and condition of health is so very slight as scarcely to deserve the name of a disease; sometimes the disorder defies all treatment, and the deadliest forms of plague are not more fatal.

In these malignant and terrible cases, the eruption, if it appears at all, is livid and partial, and fades early, and is attended with a feeble pulse, a cold skin, and typhoid depression. Sometimes the patient sinks at once, and irretrievably, under the virulence of the poison, and life is extinguished in a few hours. A gentleman called one day at my house, and not finding me there, followed me between twelve and one o'clock to the hospital. He wished me to visit his wife, four or five miles out of town, who had been taken ill that morning. He feared that she was about to have scarlet fever, but he was not much alarmed for her safety; for when he found that I could not be at his house before six, he said that that hour would not suit the general practitioner in attendance upon her, and he begged me to fix some time for seeing her *the next day*. I did so; but the same afternoon rapid sinking came on, and the patient was dead very soon after the hour at which I had first proposed to visit her.

In other cases of *scarlatina maligna*, the typhoid symptoms rapidly deepen; and death, in children, is apt to occur on the fifth day of the complaint; and not uncommonly as soon as the third. The pulse becomes frequent and feeble; the tongue dry, brown, and tremulous; the debility extreme; the throat is ulcerated and gangrenous; and the respiration is impeded by viscid mucus which collects about the fauces. Over this variety of the disease medicine has comparatively little control.

The chance of recovery is much greater in the *scarlatina anginosa*, when the eruption is florid, and stands well out. But even in this form of the disorder there are many sources of danger, and various ways in which it may prove fatal.

In the first place many of the patients die, apparently from inflammation or effusion within the head. They have violent headache, with furious delirium, which is followed by coma, and death.

And, secondly, the state of the throat is full of peril. As the disease proceeds, although the rash may be steadily persistent,

the throat becomes foul and sloughy, an acrid discharge from the nostrils, which are so stuffed and swollen internally that the patient can scarcely breathe through them, runs over and frets the upper lip; the parotid and submaxillary glands swell, sometimes enormously; and fever is lighted up afresh. In this way many cases prove fatal in the second week of the disorder. The cervical swellings cause constriction of the fauces and stiffness of the neck; and sometimes, doubtless by interfering with the free return of the blood from the head through the jugular veins, they produce a tendency to coma. With these symptoms there is often also purging, and an excoriated anus.

The acrid matters furnished by the ulcerating and gangrenous throat irritate the nasal membrane in the one direction, and that of the alimentary canal in the other. We thus account for the running from the nose, the soreness of the *alæ nasi* and upper lip, and the smarting diarrhoea: and the swelling of the parotids and neighbouring glands is evidently caused by absorption of the irritating and poisonous matter from the ulcerated throat. There is just the same relation and dependency between these different local alterations, as between the enlarged mesenteric glands and ulceration of the follicles of Peyer in continued fever, between a bubo in the groin and a chancre on the glans penis. It is the condition of the throat that gives rise, in these cases, to the most formidable symptoms. The system is reinoculated from that source. Whenever I see the glands much enlarged at the angle of the jaw, and beneath the jaw, in a child labouring under scarlet fever, I augur ill of the case. Sometimes the mischief extends into the larynx, and so destroys the patient. But this is probably a very rare event. There is, however, still another, and a very common consequence of the throat affection—I mean inflammation of the eustachian tube, reaching sometimes the tympanum itself, and causing permanent deafness, either by closing up the tube, or by the destruction of the *membrana tympani*, and the little bones belonging to it. In one case, which was under my own care, I observed that, for a short time before death, every time the child swallowed, a part of the fluid food ran out immediately at one of its ears. I had no opportunity of examining the state of the part after death, but the disorganization arising from the sloughing ulceration of the throat must have been frightful.

The scarlatina simplex is scarcely, I repeat, a disease. Sydenham has said of it that it is "fatal only through the officiousness of the doctor."

Even when the patient has escaped from the complaint itself, he is often exposed to

great hazard and distress from its *consequences*. Children who have suffered a severe attack of scarlet fever are liable to fall into a state of permanent bad health, and to become a prey to some of the many chronic forms of scrofula: boils, strumous ulcers, diseases of the scalp, sores behind the ears, scrofulous swellings of the cervical glands and of the upper lip, chronic inflammation of the eyes and eyelids. The same afflicting results are very common after small-pox also, and measles.

I have several times, when the rash of scarlet fever was disappearing, known pain and swelling of the larger joints to supervene, simulating very closely the local phenomena of subacute rheumatism: and I have noticed that the painful joints were eased and benefitted by friction; a circumstance which may help to distinguish this articular affection from true rheumatism. Another distinctive circumstance is that, although all these patients were children, the heart in no instance became implicated, in connexion with the tumid joints.

But the most common, and the most serious of the sequelæ of scarlatina, is *anasarca*, serous infiltration of the subcutaneous cellular tissue, accompanied often with dropsy of the larger serous cavities. So common is this that Cullen has even introduced the circumstance as a part of his definition of scarlet fever. He found the dropsy a very manageable complaint; but it really is, in many—nay, in most cases, if we look to its probable ultimate effects—a most formidable one. This affection belongs to the class of *febrile dropsies*. It appears to have no relation, or, if any, an inverse relation, to the violence and danger of the preceding exanthem. It is much more common after a mild than after a severe disease. This, in all probability, is owing to the circumstance that less care and caution are observed in the milder cases during the dangerous period of desquamation and convalescence; a period more dangerous, in that form of scarlatina, than any other. In the graver cases the convalescence is slower, and more doubtful; and accidental or careless exposure to cold is more guarded against, or takes place later: whereas, in the slighter varieties of the disorder, the patients are apt to go out while the new cuticle is still forming. If you carefully trace the histories of dropsy succeeding to scarlet fever, you will almost always find that the fever had been trifling; that the patient, considering himself well, or nearly so, had heedlessly encountered a cold or damp atmosphere so soon as he felt himself strong enough to leave the sick chamber. Plenciz, who has written well on this subject, and who was quite aware of its importance, remarks that



those patients who have had much desquamation of the cuticle are the most liable to the dropsy; that it is more frequent in winter than in summer; and in such as are early exposed to the open air after having passed through the fever, than in those who remain longer at home. When the desquamation is over, and the new surface has become in some degree hardened, the peril is past. According to the observations of Dr. Wells, the dropsical symptoms commonly shew themselves on the twenty-second or twenty-third day after the commencement of the preceding fever. They have been known to begin as early as the sixteenth, and as late as the twenty-fifth day. When no dropsy took place before the end of the fourth week, Dr. Wells always ventured to state that it was no longer to be dreaded.

This anasarca is seldom observed except in children and young persons. The age of the oldest patient that Dr. Wells had known to be so affected was 17. Of 10 instances of the disease seen by Dr. Blackall, six occurred in children not exceeding the age of 10, and two others in persons who were respectively 10 and 16 years old.

We cannot infer, from this, that the susceptibility of this dropsical condition lessens as years increase. The great prevalence of this variety of dropsy in early life has no direct relation to age as a predisposing cause. The fact is explained by the accidental peculiarities of the antecedent disease. The contagion of scarlet fever is active and widely diffused. Few children escape its agency. Few are capable of taking the disorder a second time. It follows that scarlet fever is rare in adult life: and as dropsy succeeds that disease in a very limited number of instances only, dropsy arising in connexion with scarlet fever must, at the adult age, be still more uncommon.

Yet it is not unknown. One of Dr. Blackall's ten patients was thirty, another forty-two years old. Both of these were women.

In this as in other species of febrile dropsy, the urine is very constantly troubled, bloody, albuminous; and it is an interesting fact, that the chronic form of renal dropsy, manifesting itself at some distance of time, has been distinctly traced back to its source in the acute anasarca immediately consequent upon scarlet fever. The sequence has occurred, in all probability, much oftener than it has been noticed. There is scarcely room for doubting that the series of organic changes in the kidney, described by Dr. Bright, do frequently date their origin from an attack of febrile anasarca: and in proportion as facts, accurately observed, accumulate on this subject, the chain of connexion becomes more clearly visible between acute

febrile dropsy, dropsy succeeding scarlet fever, and chronic renal dropsy. It is evident, indeed, that the two first of these three are, in their characters and exciting causes, identical, the only difference between them consisting in the remarkable predisposition towards the second, impressed upon the body by the preceding exanthem. Both of them again are, in many instances, initiative of the third.

It is natural therefore to expect that in the variety of febrile dropsy now under consideration, as well as in those which I formerly described, *inflammation* should be common, and evidenced by its unequivocal effects. And it is so. But the dropsy, I am persuaded, has no essential connexion with common inflammation of any part, unless the state of the kidney be of that kind. I have examined the body very carefully in fatal cases, and found the serous cavities full of clear liquid, without a trace of redness or of any of the unmistakable products or events of inflammatory action.

The earliest threatenings of this formidable complaint demand attention. It is usually preceded for a day or two, or longer, by languor and peevishness; frequently by nausea and vomiting, and a costive state of the bowels. The pulse, in the outset, has been found slow, and beating with irregular intervals; but it afterwards becomes frequent. The urine, at first, is scanty as well as altered in appearance. The face becomes pale, and chuffy. Sometimes, as the disease proceeds, violent headache, dilatation of the pupils, convulsions, or palsy, denote effusion within the head. Much more frequently the pleuræ are the seat of the internal dropsical accumulation, and dyspnoea is a prominent symptom. Ascites, to any considerable amount, is rare.

The contagion of scarlet fever is active, but uncertain. It is not so strong, nor so uniform in its action, as that of small-pox; but it seems to be peculiarly subtle and tenacious. Fomites infected with the variolous poison soon lose their power to excite disease if they are freely exposed to fresh air. But the contagion of scarlet fever lurks about an apartment, or clings to furniture and clothes, for a very long time, even after some care has been taken to purify them. Of this I have known several remarkable examples. You will be asked at what period the danger of imparting the disease on the one hand, or of catching it on the other, is over; and I would recommend you to answer that you do not know. I am sure I do not: and therefore I always decline the responsibility of giving an oracular opinion on the matter.

I may arrange what I have to say of the *treatment* of scarlet fever, according to the



three varieties of it already mentioned, the *scarlatina simplex—anginosa—and maligna*.

The first of these requires nothing more than confinement to the house ; and the observance of the antiphlogistic regimen in regard to diet ; and regulation of the bowels.

With respect to the management of the severer forms of scarlet fever great differences of opinion have prevailed. I should recommend you to look into Dr. Williams's book on Morbid Poisons, recently published, for some interesting and satisfactory information on this head. Satisfactory to me at least it is, because the result of it goes to justify that kind of practice which I have always considered to be the safest and the best in this disorder.

In the *scarlatina anginosa*, the treatment I employ is very much the same as that which I consider proper for many cases of continued fever. If the heat of the surface be very great and distressing, I should certainly not recommend the cold *affusion*, but cold or tepid *sponging* will be very refreshing and beneficial. If delirium should come on, I would shave the scalp, and apply cold to it, and take away some blood by leeches : and the leeches I would apply to the *throat* rather than to the *temples* ; for the tonsils, in this form of the disorder, are more swelled and inflamed, and probably a part of the head affection may arise from a disturbance of the balance of the cerebral circulation, produced by the tumefaction around the great veins that return the blood from the head. By leeching the throat you relieve that part, and at the same time the *head* *also*. If the fever were extreme and the delirium violent, I would take blood cautiously from the arm, while the patient was sitting up, and carefully watch the effect.

When none of these untoward head symptoms declare themselves, all that we have to do is to keep the bowels open by moderate laxatives. The patient may take saline draughts, which are grateful and cooling. The citrate of ammonia thus administered is what I frequently prescribe : and if the pulse be without hardness, and feeble, I order an excess of the carbonate of ammonia, so that four or five grains of it in each dose may remain unsaturated by the lemon-juice.

With respect, then, to this form of the complaint, the principles of treatment are, not to interfere unnecessarily ; to take blood when certain symptoms require it, but to take no more than seems likely to be sufficient for the purpose in view ; to bear in mind that the system is labouring under a morbid poison, which we cannot eliminate from the blood, but the dangerous effects of which we are to watch and obviate.

In that worst form of scarlet fever, the *scarlatina maligna*, all our care will too often be in vain. There appear to me two main

sources of danger. The one arises from the primary impression of the contagious poison upon the body, and particularly upon the nervous system, which is overwhelmed by its influence. The patients sink often at a very early period, with but little affection either of the throat or of the skin. If we can save such patients at all, it must be by the liberal administration of wine or bark, to sustain the flagging powers until the deadly agency of the poison in some measure passes by. But another source of danger arises from the gangrenous ulceration which is apt to ensue in the throat, when the patient is not killed by the first violence of the contagion. The system is *re-inoculated*, I believe, with the poisonous secretion from the throat. Now under these circumstances also, quina, or wine, and upon the whole I should give the preference to wine, are to be diligently, though watchfully given. And something may be done, by the way of gargles, to correct the state of the throat, and to prevent the distressing and perilous consequences which would otherwise be likely to flow from it. A weak solution of the chloride of soda may be employed for this purpose ; and if the disease occurs in a child that is not able to gargle, this solution may be injected into the nostrils, and against the fauces, by means of a syringe or elastic bottle. The effect of this application is sometimes most encouraging. A quantity of offensive sloughy matter is brought away ; the acrid discharge is rendered harmless ; the running from the nose, and diarrhoea, cease ; and the disease is converted into a form which approximates to the *scarlatina anginosa*. This is a great improvement upon the old plan of ordering capsicum gargles.

From several distinct and highly respectable sources, *chlorine* has been strongly pressed upon my notice, as a most valuable remedy in the severest forms of scarlet fever. My informants have stated, that whereas they formerly dreaded to be summoned to cases of that disease, they now, having had experience of the virtues of chlorine, felt no misgivings in undertaking its treatment. Since these representations were made to me, I have not had opportunities enough of trying this drug to enable me to speak confidently of its sanative power ; but I shall certainly employ it in future. I presume that its disinfecting properties may, in part, account for the good it does. It probably deprives the foul secretions of their noxious quality.

In the fourth volume of the *MEDICAL GAZETTE*, Messrs. Taynton and Williams, of Bromley, write in high praise of this remedy. I will give you the formula for its preparation.

Two drachms of the chlorate of potass are to be dissolved in two ounces of hydrochloric

acid, previously diluted with two ounces of distilled water. The solution must be put immediately into a stoppered bottle, and kept in a dark place.

Two drachms of this solution, mixed with a pint of distilled water, constitute the chlorine mixture; of which a table spoonful, or two, according to the age of the patient, may be given for a dose, frequently.

We must not omit, in this, as well as in the other forms of the complaint, to pay attention to the state of the bowels, and by no means to allow them to remain costive.

I have seldom used blisters in this disease; but an experienced physician has lately told me that, when applied *early* to the neck and throat, they appear to render the affection of the fauces mild.

When the patient is at length convalescent, he will require careful watching till that period has gone by at which the dropsical symptoms are apt to appear. It is by neglect or imprudence that these symptoms are brought on. The patient should be sedulously protected from all exposure to cold, and wet, and fatigue; indeed he ought not to be permitted to go out of the house until the progress of desquamation is fairly over: and I would not willingly let a patient go out till some little time *after* this. When dropsical symptoms *do* occur, if they are very slight, they may be removed in general by purgatives, and by digitalis. The *super-tartrate of potass* is a good remedy too in such cases, and the use of the *warm bath*, which may be repeated every night.

But if there be any indication of *inflammatory* disease within, we must adopt more active measures. We have not, *now*, to contend with the depressing influence of a morbid poison, but we have to dread the consequences of acute inflammation; or of the sudden effusion of fluid, the mere presence and pressure of which may fatally oppress vital organs. We should have for our object to arrest the inflammation—or to promote the removal of the effused fluid—by bloodletting, and by the exhibition of purgative medicines, and of *mercury*. The worst case of this kind that I ever witnessed occurred in a boy of 15, the son of a tradesman in my neighbourhood. He had had scarlet fever, *mildly*, and had got well, or nearly well, of it, as he believed: and he went, one evening, into his father's stable, and staid there some time in the cold, during the period of desquamation. A day or two afterwards he began to have headache, and in a few hours more was seized with convulsions of one side of the body, coma, and at length hemiplegia; and his face and extremities became at the same time anasarous. A large quantity of blood was taken from his arm, he was cupped on the temples, and took mercury till in a short space of

time he was profusely salivated. Under this treatment the coma and dropsy rapidly disappeared, and he presently recovered the use of his palsied limbs, and got quite well. I make no doubt that some effusion took place within the cranium, as well as into the subcutaneous cellular tissue. The plan of treatment followed in this case, modified according to particular circumstances, is that which I should again pursue, and therefore what I should recommend you to pursue, in similar emergencies.

You are probably aware that *belladonna* is believed by many to exert a preventive and protecting influence upon the body against the contagion of scarlet fever. Hahnemann, the author of the Homœopathic hypothesis (and thereby of much mischief to mankind), was the first to assert this. It is said that belladonna administered in small doses causes sometimes a rash resembling that of scarlatina. It certainly is apt to produce dryness and redness of the fauces. I know nothing, by my own experience, of the alleged conservative property of this vegetable, but in the small quantities recommended, there can be no harm in trying it, *provided that* its employment does not lead to a neglect of other precautions. Three grains of the extract of belladonna are dissolved in an ounce of distilled water; and three drops of the solution are given twice daily to a child under twelve-months old, and one drop more for every year above that age. It is affirmed that if this remedy does not prevent the disease, it will render it mild; and that if it be taken four or five days before exposure to the contagion, the resulting scarlatina never proves fatal.

## LECTURES

### ON THE

## DISORDERS RESULTING FROM DEFECTIVE NUTRIMENT.

By G. BUDD, M.D. F.R.S.

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ANOTHER disorder that frequently prevails in our prisons, and that seems often to originate in deficient nutriment, is diarrhoea; and in that case it appears to result, like the disorders I have already spoken of, rather from want of some elementary principle, than from mere starvation. If the food be sufficiently varied, and its quantity only reduced, the bowels become confined instead of relaxed. This was well shown in the famous voyage of Capt. Bligh, subsequent to the mutiny on board the *Bounty*, which took place near Otaheite, on the 28th of April,

1789. The mutineers kept possession of the ship, and turned Capt. Bligh and 18 others adrift in an open boat, with a certain quantity of provisions. On the 2d of May, in a scuffle with the natives of one of the neighbouring islands, some of their provisions were lost, and their stock was reduced to 150 lbs. of bread, 20 pounds of pork, 28 gallons of water, 5 quarts of rum, and 3 bottles of wine. With this slender supply Capt. Bligh put to sea, steering across the Pacific for New Holland. To make the provisions hold out he placed the men on the allowance of  $\frac{1}{28}$ th of a pound of bread and a quarter of a pint of water, three times a day, with occasionally half an ounce of pork and a spoonful of rum for dinner. The weather during the passage was extremely wet and stormy. On the 20th, Capt. Bligh remarks, "extreme hunger was now too evident, but no one suffered from thirst, nor had we much inclination to drink; this desire, perhaps, being satisfied through the skin. The little sleep we got was in the midst of water, and we constantly awoke with severe cramps and pains in our bones."

On the 25th of May, the supper portion of bread was discontinued. On the 28th of May, they reached, and landed, on the northern coast of New Holland. At this time, Capt. Bligh states, the general complaints among us were "a dizziness in the head, great weakness of the joints, and violent tenesmus; *most of us having had no evacuation by stool since we left the ship.* I had constantly a severe pain at my stomach, but none of our complaints were very alarming."

On the 30th of May, they set sail along the coast, and on the 3d of June again launched into the ocean. During the six days they remained on the coast of New Holland, they found oysters, a few chams, and water, and caught a few small diving-birds. They had also good rest at night, and were much refreshed. On the 10th of June, Captain Bligh thus describes the condition of the crew: "an extreme weakness, swelled legs, hollow and ghastly countenances, a more than common inclination to sleep, with an apparent debility of understanding, seemed to me the melancholy presages of approaching dissolution."

On the 14th of June, they reached Cou-pang all living, after crossing a sea of more than 1200 leagues in an open boat.

There are many circumstances of great interest in the narrative; but I have cited it as showing the tendency to constipation produced by diminution in the quantity of food. This renders it probable that diarrhoea, if it result from insufficient nutriment, is to be attributed to some deleterious article, or to the absence of some elementary principle necessary for the support of the body.

This subject receives some elucidation

from the experiments of the Paris committee appointed to investigate the nutritive properties of gelatine.

During the French Revolution, when provisions were very scarce, and the poor of Paris almost famished, it was proposed that the gelatine, which enters into the composition of bones, should be extracted from them by means of heat or acids, and formed into soup for the poor.

At first, the highest anticipations were held of this expedient, which, it was supposed, would increase greatly the quantity of nutriment to be derived from animals—or, to use the words of one of its sanguine advocates, would, out of four oxen, create a fifth.

After some time, it was put in practice in the Hôtel Dieu, and some other hospitals in Paris. The bones of the meat used in the house were broken up, and placed into iron cylinders, when they were exposed to the action of steam, at the temperature of about 220°. By this the gelatine was extracted, and it was afterwards used, together with a small quantity of fresh meat and vegetables, to form soup for the sick.

The mortality in the hospital increased, and the medical men soon began to entertain a very unfavourable opinion of the gelatine soup. A commission, comprising all the physicians and surgeons of the hospital, was formed to investigate the subject, and drew up a report in which they stated that the gelatine soup, even in small quantity, and when rendered more agreeable to the taste by the addition of salt and the juices of vegetables, impairs digestion, and causes nausea, a burning thirst, flatulence, and diarrhoea. In consequence of this report, the gelatine soup was discontinued at the hospital.

But the evidence of its ill effects was not drawn solely from the practice of the hospital. Some members of that commission tried it on themselves, and came to the conclusion that it is not only insufficient for nutriment, but that, in certain quantity, it is positively detrimental to health.

The question excited considerable interest in Paris, and a commission, with Magendie at its head, was appointed by the Institute, to ascertain by experiment the nutritive properties of gelatine.

Their experiments were performed on dogs. They found that for the first day or two the dogs ate the gelatine with avidity, but they soon ceased to touch it, and actually died of starvation, or, when they were kept together devoured each other; leaving the gelatine untasted by their side. The water given them at the same time, they continued to take to the last. The gelatine caused in all of them profuse diarrhoea.

Dogs were next kept on jelly associated with other substances in small quantity.

Like the subjects of the former experiment they died of inanition. They all had *diarrhœa*, lost flesh rapidly, and became extremely weak.

The following is one of the experiments. A tall dog, about a year old, was kept on a diet of bread and glue, for 63 days. The most profuse diarrhœa continued all this time. It being then evident that the dog must die if the same regimen were persisted in, he was fed on flesh for four days; which restored his strength, and *put a stop to the diarrhœa*.

It was clearly shown that the loathing which the dogs had to the gelatine was not owing to its insipid taste; because they rejected it just as soon, and it had precisely the same effect, when flavoured with different aromatics.

The committee came to the conclusion, that gelatine is not only insufficient for the nourishment of dogs, but that when given above a certain proportion in their food, it proves positively injurious, and excites insurmountable disgust, and that the diarrhœa, which constantly occurred in these experiments, resulted from the direct influence of the gelatine, and not from the want of some necessary principle in the diet.

A French physiologist, M. Chossat, has since performed some experiments that have led him to an opposite conclusion. He kept pigeons exclusively on wheat, from which other grains and pebbles had been carefully separated, and water. At first the birds grew fat and increased in weight, but at the end of one, two, or three months, they became thirsty and affected with diarrhœa. The thirst increased until they drank seven or eight times as much as they did at first, the diarrhœa became excessive, the birds wasted, and all died from the eighth to the tenth month of the experiment. At the time of their death, their bones were so thin, and so fragile from want of lime, that they were broken with the slightest effort.

Other pigeons which M. Chossat kept on the same food, *with the exception that he added a little carbonate of lime to their corn*, continued to be well nourished and healthy. He concludes that the diarrhœa in the former pigeons was the consequence of an insufficient supply of lime, and intimates that such might have been the cause of the diarrhœa in some of the experiments of the Paris committee. He supposes that an insufficient supply of lime is a frequent cause of diarrhœa, especially during childhood, when a considerable quantity of it is required for the growth of bones.

It is no doubt dangerous to trust much to analogy in such causes, and to infer because a certain effect has been produced by a certain diet in one animal, that the same effect will be produced by the same diet in another

animal of a different kind; but the experiments I have related would certainly lead us to expect that in man, as in dogs and pigeons, diarrhœa might be brought on by restriction to a diet wanting in some necessary principle. It is well known that diarrhœa occasionally prevails extensively in our workhouses and prisons; and the question at once occurs—and it is a question that motives of humanity might prompt us to settle—is it owing in all, or in any, of those cases to the want of some necessary principle in diet?

In some of our prisons where the diet is chiefly bread and water, diarrhœa is common, while in others in which the nominal allowance is nearly the same, constipation is the prevailing complaint. Is this difference owing to the water being soft in the one case; hard, in the other?

The knowledge we have recently acquired of the whole subject of nutrition makes us better qualified to enter on the investigation of such questions; and justifies the expectation that they will not long remain unanswered.

The most striking instance—at least the instance that has excited most attention—of diarrhœa prevailing among prisoners, has been in the Milbank Penitentiary. Diarrhœa seems to have prevailed more or less among the inmates of the Penitentiary from its first establishment; but in the spring of 1823, it extended so much, and the health of the prisoners was so broken by this and other ailments, that the attention of the government and of the country was strongly directed towards it. Dr. Latham and Dr. Roget were appointed to inquire into the state of the Penitentiary, with a view of ascertaining the cause of the disorder, and, if possible, of arresting it. Those gentlemen—and certainly none more fit for the office could have been selected—investigated the subject with great care, but after an inquiry protracted for fifteen months, left the origin of the matter still in doubt. At the close of their labours, Dr. Latham published a small volume, which contains not only an admirable description of the symptoms of the disorder, but is besides replete with enlarged and just views of pathology. The book will perhaps never be extensively read, but it will be regarded as the work of an accomplished physician, and may well serve as a model to those engaged in similar inquiries.

Dr. Latham commences his account of the state of the Penitentiary from July 1822, when the dietary of the prison was changed, and the animal part of it reduced almost to nothing.

“During the following autumn, the general health of the prisoners began visibly to decline. They became pale and languid, and thin and feeble. Those employed in tasks requiring much bodily exertion were



unequal to the same quantity of work as formerly. Those at the mill could grind less corn; those at the pump could raise less water." But notwithstanding this remarkable depression of the general health, there appeared among them no manifest signs of any peculiar disease until the beginning of February, when a few persons presented marks of scurvy.

Between the 14th of February and the 1st of March, no fewer than 48 prisoners came into the infirmaries, affected chiefly with diarrhoea and dysentery of a peculiar kind. On the 28th of February, when Dr. Latham and Dr. Roget first visited the prison, they found the prevailing disorders to be scurvy, precisely like that which occurs at sea, marked by spongy and livid gums, and petechiæ, and bruise-marks on the skin, especially on the upper extremities—and this peculiar diarrhoea or dysentery. These complaints were found conjoined in most cases, but not in all: there were a few instances of scurvy without disorder of the bowels; and numerous instances of diarrhoea and dysentery where no marks of scurvy had appeared.

But all the patients, whether affected with scurvy alone, with diarrhoea alone, or with both, presented the same constitutional derangement, denoted by a sallow countenance, impaired digestion, diminished strength, a feeble circulation, various degrees of nervous affection, as tremors, cramps, or spasms, and various degrees of mental despondency.

These disorders had spread to such a degree that more than one half of the whole number of prisoners, between eight and nine hundred, were affected with them; but different classes of prisoners were not affected equally. Those longest in confinement suffered most; and the women, more than the men. It was found too, that the prisoners employed in the kitchens, though belonging to the class which suffered most, were all free from the disease, and that the officers and servants of the establishment enjoyed a like immunity.

A consideration of all those circumstances led Dr. Latham and Dr. Roget to suppose at first that the scurvy and dysentery were different forms of the same disease, and that both originated in the same cause—namely, a diet not sufficiently nutritious for the maintenance of health.

In consequence of this impression, they ordered an immediate change in the diet of the prison. In place of pea and barley soup for dinner, they substituted four ounces of fresh meat and eight ounces of rice daily for each prisoner, and white bread instead of brown; and as the cheapest and best antiscorbutic that could be procured at that season, they ordered for every prisoner three oranges a day, one at each meal.

The condition of the prisoners now visibly improved, and the marks of scurvy rapidly disappeared. At the end of March, there were not more than fifty persons of both sexes on whom any marks of scurvy remained; and on the greater number of these they were so slight as hardly to be detected.

As the scurvy disappeared, the diarrhoea and dysentery also declined, and the general health of the prisoners so much improved, that, in a report drawn up on the 5th of April, the physicians expressed themselves sanguine of the entire restoration of the healthy state of the Penitentiary.

These anticipations, however, were not destined to be realized. Scurvy, indeed, disappeared, not to return; but hardly had the report been published, when the bowel complaint became again more prevalent. By the middle of May it had again pervaded the prison; and by the middle of June almost all the prisoners, those admitted since the change of diet, as well as those longer in confinement, were affected with it.

The disorder of the bowels varied in degree in different cases, from simple diarrhoea to what might be called cholera or dysentery. It was often attended with pains, like those of colic, and more frequently still with a distressing sense of sinking at the stomach.

But it was found, after the disappearance of the scurvy, that the disorder was not confined to the bowels. The pale, and faded, and melancholy aspect of all those affected, or about to be so, gave evidence of more general disorder; which shewed itself more distinctly in a great variety of nervous symptoms, in headache, in cramps, and, in a few cases, in sudden attacks of mania, or convulsions, or apoplexy.

The nervous symptoms were found almost constantly associated with the bowel complaint; hardly an instance occurring of one being present without the other. From this circumstance Dr. Latham was led to regard them as component parts of the same general disorder. Of this he had additional proof in the circumstance that both the bowel complaint and the nervous symptoms, alike refractory to ordinary treatment, yielded in a very striking and remarkable manner to the same remedy—mercury given to salivation. At first considerable hesitation was felt, and very naturally, in applying so lowering a remedy in a disease presenting such obvious marks of debility; but after all common means had failed in arresting, or even in much mitigating, the diarrhoea, mercury was tried as a last resource, and produced such striking effects, that it was soon given to the exclusion of every other medicine. A few large doses of it in many cases put a stop at once to a diarrhoea that had long resisted all other treatment,



and was fast bringing the patient to the grave. It was found also, that as the bowel complaint subsided, the nervous symptoms associated with it subsided as well. The same treatment was in consequence applied to the nervous symptoms, when those formed the chief or the prominent part of the disorder, and it was in all cases followed by the same striking and beneficial results.

The efficacy of the mercury is the more remarkable, as there were no symptoms during life, and no appearances after death, indicating the existence of those inflammatory affections over which mercury is supposed to exert a curative influence. In most cases there was complete absence of fever; the tongue was pale, and moist, and clean; and the pulse not increased either in frequency or in strength. In a few cases, indeed, there was a certain degree of fever; but this never ran high, and after a few days assumed the character of hectic.

On examination after death, the only lesions found in the bowels were a few small spots of ecchymoses, and a few very small round ulcers, scattered indifferently throughout the entire length of the intestines; and even these slight traces of disease were sometimes wanting. In the head nothing attracted attention but the serum between the membranes and in the ventricles, which in some cases seemed in greater quantity than natural.

All the circumstances I have mentioned early led Dr. Latham to the opinion, that the disease was one of *peculiar* character, and that it had therefore, in all probability, some special, *peculiar*, cause.

As the disease continued to spread in the Penitentiary after a plentiful diet was allowed, it was supposed that it might be kept up by some noxious influence peculiar to the place, and it was consequently resolved to remove as many of the prisoners as possible from the Penitentiary to other places of confinement. In the beginning of August, 120 of the female prisoners were removed to the Ophthalmic Hospital in the Regent's Park, which was at that time vacant; and, between the middle and end of the same month, 200 of the male prisoners were sent on board the Euthalion hulk, which had been fitted up for them at Woolwich. The prisoners, both male and female, selected for removal, were those who had suffered most severely from the disease. The benefit of change of air and situation was immediately obvious in both classes, while no amendment took place in the prisoners who remained at Millbank.

The disease, however, did not entirely subside, either in the Regent's Park or at Woolwich. The prisoners, and especially the women, suffered frequent relapses. The experiment, however, was considered on the

whole satisfactory; and, in consequence of a representation to this effect made by the physicians to government, in the month of October, it was determined to transfer all the prisoners, male and female, remaining at Milbank, to hulks fitted up for their reception at Woolwich. Accordingly, on the 14th of November, the women, whose number had been reduced by pardons to 80, were removed on board the *Narcissus*; and between the 8th and 10th of December, the men, reduced to 281, were put on board the *Dromedary*.

The Penitentiary at Milbank was now empty, and the prisoners were divided between the Ophthalmic Hospital in the Regent's Park, and the hulks at Woolwich. I have already remarked, that the men first sent to Woolwich improved more than the women in the Regent's Park. The latter, indeed, did not go on improving for more than a few weeks. Relapses became more and more frequent, and towards the end of November several of them presented the violent nervous symptoms that had before caused dismay at the Penitentiary. In consequence of this, and of the striking improvement that had taken place in the condition of the women recently removed from the Penitentiary to Woolwich, it was thought expedient to transfer all that now remained at the Regent's Park—91 in number—to Woolwich; and accordingly, on the 21st and 23d of January, 1824, they were put on board the *Heroine*, which had been prepared to receive them.

All the prisoners were now on board hulks at Woolwich. They were 635 in number; namely, 468 males on board the *Euthalion* and *Dromedary*, and 167 females on board the *Narcissus* and *Heroine*.

Little amendment took place in the women that had been removed from the Regent's Park, and severe cases of bowel complaint continued to recur among them. But all the other prisoners, though transferred at different seasons of the year—in August, November, and December—had experienced a striking change for the better, almost immediately on their arrival at Woolwich. The amendment, however, was not permanent: the disease soon recurred with its former characters. In the month of March 1824, it prevailed to such extent among the women on board the *Narcissus*, who had been removed direct from Milbank, that hardly one of them escaped a severe attack of the complaint, in one or other of its forms. The condition of the female prisoners on board both hulks was now so deplorable, that, as affording the only prospect of preserving their lives, as well as in consideration of their severe and protracted sufferings, it was resolved to set them at liberty. This was done gradually, as their

friends were found willing to receive them ; and on the 18th of June the last of them quitted the hulks.

The men, after their removal to the hulks, suffered much less than the women. They were liable to occasional attacks of diarrhoea, but had no formidable disorder. Instead of being pardoned, like the women, they were distributed among the hulk establishments at Sheerness, Chatham, and Woolwich.

Little is known of the condition of the women subsequently to their discharge. A few of them, whom Dr. Latham and Dr. Roget casually met, had the appearance of health, but were not exempt from occasional attacks of diarrhoea. The men, dispersed among the convicts at Sheerness, Chatham, and Woolwich, soon recovered their health, and, it would seem, made no more frequent complaints than the men with whom they were mingled.

After the disease had been so closely watched, and the circumstances so varied, it would seem, to one who has not felt the difficulties attendant on such inquiries, that there could be little difficulty in discovering, at least, the *general* nature of its cause.

At first the circumstance of its having broken out, or at least spread so as to excite attention, soon after the diet had been much lowered ; of its being associated with scurvy, which is acknowledged to proceed from faulty or insufficient food, of its prevailing most in those who had been longest in confinement, while the officers and attendants were as yet exempt from it,—all led to the opinion which the physicians expressed in their first report, and which every one would have formed on similar data, that the disease had its origin in insufficient nutriment. This opinion was strengthened, at first, by the amendment that immediately ensued on the adoption of an improved scale of diet in the prison ; but subsequent events showed clearly that an insufficient diet, although it might, and unquestionably did, aggravate the disease, by inducing scurvy, and by lowering the general condition of the prisoners, yet could not be considered its primary or essential cause.

This disease again spread, and indeed became more general than ever, after the diet had been rendered sufficient, and more than sufficient, for the maintenance of health. It affected the prisoners admitted after the adoption of this improved diet, as well as those admitted before. The officers no longer enjoyed an immunity, but several of *those most employed about the sick* suffered the same disease.

After the men were removed to Woolwich, many of them suffered relapses, at a time

when their health was to all appearance *entirely* re-established.

These circumstances are all incompatible with the notion that the disease was caused, and kept up, by insufficient nutriment. Another circumstance that gives more than suspicion of a different origin, is the remarkable—one cannot help calling it the *specific*—influence of mercury given to salivation, in arresting it in all its forms. The ill effects of mercury in scurvy have several times fallen under my own notice, and have been remarked by all writers on the subject. Kramer, who was physician to the imperial armies in Hungary in the early part of last century, tells us that of 400 men, affected with genuine scurvy, to whom, on the advice of Boerhaave, mercury was given so as to induce salivation, not one survived. His own experience seems fully to justify the caution he emphatically gives us—"Shun mercury as a poison."

As mercury is not itself a constituent of the animal frame, and as it exerts a lowering influence on the system, we should expect that it would have an injurious effect in any other form of disease caused by want of some necessary elementary principle in diet. The fact that it was productive of singular benefit in the disease of the Penitentiary, is, then, a strong argument that this disease did not originate in insufficient nutriment. The same circumstance tends to the conclusion that it is not to be ascribed solely to confinement, to want of exercise, or to any other of the depressing influences to which, as prisoners, the inmates of the Penitentiary were subjected.

The efficacy of the mercury, as I have already remarked, did not depend on its counteracting any inflammatory action. In most of the cases there were no inflammatory symptoms, and losses of blood were ill borne. Dr. Latham observes, "In a few we ventured to try the effect of bleeding from the arm, sitting by the patient while the operation was performed ; and thus, perhaps, when four or five ounces of blood had flowed, the pulse would falter, and we were compelled to stop ; or we were compelled to stop when hardly a single ounce had been lost. I am sure there was no good derived from this practice, but, with all our cautions, I am not sure there was no evil."

The constant and marked efficacy of mercury under such circumstances cannot be explained with our present experience of the medicinal properties of this drug, otherwise than by supposing that it counteracted some deleterious agent, or morbid principle, that had found its way into the system. As the disease was confined to the Penitentiary, we could look for the source of such a principle only to emanations from the soil, or from

the bodies of those already affected with the disease. The malady, it would seem, depends on some local influence, or it is propagated by contagion.

The opinion that the disease was produced by some malarious emanation from the soil, might seem at first sanctioned by the situation of the prison, on the banks of the Thames, and by the fact that dysentery not unfrequently prevails in marshy districts. But it was justly remarked, in the first report of the physicians, that the dysentery which depends on marsh malaria is usually associated with intermittent fevers, and has occurred only at the hot seasons of the year; whereas the Penitentiary, from its first establishment, has been altogether free from those diseases which marsh malaria confessedly engender; and the peculiar disorder which formed the subject of their investigation, first spread so as to excite alarm at the close of a winter unusually severe. The conclusion was imperative, that if the disorder originated in emanations from the soil, those emanations were of different kind from ordinary marsh malaria, and were evolved under different atmospheric conditions. The symptoms of the disease too, and the appearances observed after death, were very different from those of common dysentery. In the dysentery of tropical climates, and in that which has at times prevailed in marshy districts of temperate climates during the autumnal months, the appearances found after death are very striking and characteristic. They consist in extensive ulceration of the large intestine. In cases that prove fatal rapidly, a great portion, sometimes as much as three-fourths, or even four-fifths, of the mucous membrane, is found in a state of slough. In protracted cases we find ulcerations of like extent, and, at the same time, enormous hypertrophy of the submucous cellular tissue, rendering the intestine, when emptied of its contents, three or four times its natural weight. These changes are almost always limited, in a very remarkable manner, to the large intestine. The small intestine may be perfectly healthy quite up to the ileo-cæcal valve, while, immediately beyond it, the mucous membrane is almost entirely destroyed by slough or ulceration.

In the disease of the Penitentiary, on the contrary, nothing was found but a few very small circular ulcers, widely scattered, without preference, throughout the entire length of the intestine, and here and there a small spot of ecchymosis. In some cases, even these slight traces of disease were wanting, and no morbid appearance whatever was found but a few small patches more vascular than the rest of the intestine.

These circumstances rendered it clear, that

if the disease at the Penitentiary depended on any local influence, this was very different in kind from the ordinary marsh malaria. The recurrence of the disease in a severe form, both in the prisoners removed to the Regent's Park, and in those sent to Woolwich, showed almost conclusively that it was not caused by *any* malarious emanation peculiar to the situation of the Penitentiary. We know, indeed, that persons who have once had intermittent fever are long liable to a recurrence of it at certain seasons, or on any impairment of their general health, without fresh exposure to malaria. But cases of this kind occur only in a scattered manner, and the subsequent attacks are usually milder than the first. The disease, in a regiment, or in any body of men stationed in a malarious district, although it may not entirely disappear, will yet subside on the whole when the men are removed to a healthy station. But the disease of the Penitentiary prevailed more extensively among the female prisoners, and was more alarming after two removes—the first to the Regent's Park, the second to Woolwich—than while they remained at Milbank. All these circumstances, together with the fact that the disease did not cease to recur at any season, if they do not entirely disprove the hypothesis of any peculiar emanation from the soil, at least render such hypothesis extremely improbable.

We come now to the last supposition, namely, that the disease was propagated by contagion.

When we see a disease confined to a particular locality, and there affecting, in succession, great numbers of persons whose previous habits have been different: if we cannot ascribe it to impure air from defective ventilation, or to some moral influence, we are compelled to seek for its cause in unwholesome or insufficient diet; in noxious emanations from the soil; or in contagion.

The physicians who visited the Penitentiary seem never to have had the notion that the disease could be caused by defective ventilation; and if they had entertained such a notion at first, they must have removed it when they found the disease recurring in the Regent's Park, and at Woolwich.

The prisoners at the Penitentiary were no doubt subject to depressing moral influences, but the same influences are acting on persons sentenced to long terms of confinement in other prisons where no disease at all like that of the Penitentiary, exists. The circumstance that the disease affected some of the officers, and others in attendance on the sick, affords additional refutation of the notion that it originated in moral influences. I may again notice, as bearing strongly on the same point, and tending to the same conclusion, the extraordinary efficacy of mercury, given to

salivation, in arresting the various forms of the disease.

The supposition that the disease originated in defective ventilation or in depressing moral influences being excluded, it follows, that all those circumstances which discountenance the notion that it was caused by faulty diet or by malaria, are, to precisely the same extent, arguments in favour of the contagious nature of the malady. The fact of the disease continuing to spread—1st, after the diet was changed; 2d, after the prisoners were removed to the Regent's Park and Woolwich—directly points to contagion as its source. Dr. Latham gives more circumstantial evidence to the same effect. He says, "several officers of the establishment were affected, and those especially who were in frequent intercourse with the sick. Twelve male and six female officers suffered the same forms of disease with the prisoners themselves. The chaplain, also, and various members of his family, residing within the walls of the Penitentiary, had the disease in the form of bowel complaint; himself, (as he believed) in consequence of his attendance upon the sick prisoners, and his family, (as he believed) in consequence of a female selected from among the prisoners to become his servant being received into his house, before she had entirely recovered from the disease."

The prisoners admitted into the Penitentiary after the diet had been changed, almost all took the disease; and in them it had precisely the same characters as in those who had been longer confined.

"Three persons employed at the ophthalmic hospital, who had not been at Milbank, suffered disorder of the bowels, under one of the forms in which it had prevailed among the prisoners, that of cholera morbus."

"The female prisoners on board the *Narcissus* had been convalescent during several weeks; when the females from the Regent's Park, of whom several had recently suffered renewed attacks of their disorder, were removed to Woolwich, and put on board the *Heroine*. Both vessels were moored close to each other, and some women from the *Heroine*, for better accommodation, were transferred to the *Narcissus*. Not many days afterwards, there was a general complaint of illness on board the latter vessel, which terminated in that form of disease which has been described, occurring in the month of March."

All these facts afford strong presumption that the disease was propagated by contagion. But in order to satisfy our minds, the supposition of the contagious nature of the malady should explain, not a few only, but all the chief circumstances noticed; or at least it should not be incompatible with any of them. In the history of the malady,

very striking circumstances are—the immediate improvement in the health of the prisoners consequent on the change of diet, and, with one exception, on each removal, whether to the Regent's Park or to Woolwich;—the diseases not becoming general, and, in fact, ceasing to spread, when the prisoners were set at liberty, or distributed among the different dock-yards;—and the frequent relapses to which those who had once had the disease were subject. No theory of the disease can be considered satisfactory that is incompatible with these circumstances; but the supposition that the disease is contagious is not incompatible with either of them.

When the diet was changed, the prisoners had scurvy, and were no doubt otherwise weakened by being kept on a diet not sufficiently nutritious. Improvement in their general condition might therefore have been expected from an amended regimen, even supposing the peculiar disease of the prison to be quite independent of diet.

The improvement that took place at first, when the prisoners were removed to the Regent's Park and Woolwich, and the subsequent relapse, are also explicable on the supposition of contagion, and, I think, on this supposition alone. They improved, at first, when removed from an atmosphere saturated with the contagious effluvia. A similar amendment has often been observed in persons removed in fever. Relapse took place when the atmosphere of their new habitation had been charged with the matter of contagion.

The circumstance that the malady seemed to spread when the prisoners were scattered, is no doubt the strongest point against the supposition of contagion; but it is not incompatible with it. The physicians and attendants on the sick in fever hospitals rarely escape the disease, while in other hospitals, where there are generally fever cases, but those cases few in number and scattered through the different wards, the attendants are seldom affected. A certain concentration, or accumulation of the poison, seems necessary to infect persons not especially prone to the disease. Erysipelas, again, plainly shows its contagious nature in hospitals, while in private houses it rarely spreads.

The last point to be explained, namely, that the prisoners suffered frequent relapses, seemed to have had great weight with Dr. Latham in preventing him from yielding his belief that the disease was propagated by contagion. The fact seemed to him contrary to general experience; which is, that the convalescents from any disease are incapable of taking it again, from those who are the more recent subjects of it. But this applies only to those contagious diseases that are acute in character and affect a person



once, only, in life; which we must suppose, therefore, to involve, and to change in some way, the entire mass of circulating fluids. The contagious diseases, as itch, porrigo, syphilis, that are unattended with fever and pursue a chronic course, do not obey this singular law. A person who has had one attack is not exempt from subsequent ones, and during convalescence, even, may, in the case of the two first diseases certainly, be reinfected not only by others, but also by matter previously derived from his own person. Erysipelas, though attended with high fever, is another instance of an infectious disease, of which one attack affords no security against subsequent ones.

The disease of the Penitentiary, from its chronic course and the absence of fever, is more allied to the latter diseases than the former; and from these characters we might have expected, antecedently to experience, that, if infectious, it would be liable to recur. The frequent relapses, therefore, to which the prisoners were subject as long as they continued in the infected atmosphere, affords no valid argument against the supposition that the disease was propagated by contagion.

All the phenomena of the disease, as recorded by Dr. Latham, are, then, explicable on the supposition that it is propagated by contagion; the contagious matter being evolved slowly, requiring for its full effect a certain degree of concentration, and affecting those, chiefly, who, by insufficient diet, or otherwise, are in a state of debility.

The fact, that we do not recognise scattered cases of the same disease in persons not in confinement, as we do of the other diseases I have cited, is no objection to this view of its nature. Its symptoms are not sufficiently striking or characteristic to enable us readily to recognise them in individual cases, where little is known of the previous history of the patients.

It might have been supposed that if contagious, it would have been earlier known and acknowledged as such; but this does not necessarily follow. The tendency of modern research has been to increase the catalogue of diseases specific in their nature and cause.

In the absence, therefore, of other evidence, it is prudent to act on the supposition that it is propagated by contagion. But, perhaps, even yet we should be wise to suspend our judgment, and await the fiat of future observation. In all probability we shall not have to wait long. The disease has again broken out at the Penitentiary, and Dr. Baly, who is so favourably known to us by his translation of Müller's Physiology, is appointed to observe it. Much may be expected from his industry and judgment.

If the contagious nature of the disease should be established, the question would

immediately arise, what is the character and material form of the morbid agent? Is it one of that group that enter the blood and contaminate the whole system, or else one of that class of parasites, whose known number is every day increasing, which stick to the surface of the body? It has just been discovered that the aphthous disease to which children are liable, which the French call *Muguet*, and which by us is comprehended, in common, perhaps, with another disease of different origin, under the term Thrush, is caused by a parasite somewhat like that of the *tinea capitis*. The disease, which usually commences in the mouth, sometimes runs through the whole intestinal canal. The parasites, it would seem, are detached in the mouth, and being freely swallowed, become transplanted below, and thus propagate themselves the whole way down. May not the Penitentiary disease be something of this kind? The singular efficacy of mercury given freely, and which is, as you know, so destructive to organisms of this class, gives some degree of probability to the hypothesis. The secretions of the intestines and the surface of their mucous membrane should be thoroughly examined under the microscope.

A disease somewhat similar, as far as I can gather from reports in the papers, has prevailed in the Union Workhouse at Bridgewater, almost from its first establishment. Not the interests of science only, but, what should touch us more nearly, the well-being of the poor, therefore, are deeply concerned in the discovery of its cause.

On this account, and because from the establishment of workhouses throughout the land, each of you may have to give your opinion on questions of this kind, I have thought that it would not be uninteresting to bring the facts connected with the disease of the Penitentiary before you. The lesson I am most anxious to teach you, is—that questions necessarily so abstruse are not to be settled hastily, or by discussions in newspapers, tainted, as they almost unavoidably are, with the bitter spirit of party; but by a careful analysis of all the facts of the case, pursued in singleness of mind and with the sole desire of arriving at truth.

The history of the disease of the Penitentiary illustrates, what I have already dwelt upon, the specific nature of that morbid change which constitutes scurvy; and the certainty with which it may be cured whatever be the circumstances under which it occurs. When Drs. Latham and Roget were first called to the Penitentiary, they found the prisoners affected with genuine scurvy,—with petechiæ and spongy and livid gums,—as well as with the disease whose history I have given you. They immediately ordered an improved diet, including three



changes a day, for each prisoner; and at the end of a month, notwithstanding the co-existence of another debilitating disease, and the continued operation of all the depressing influences to which, as prisoners, they were subject, almost all traces of scurvy had disappeared.

### ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.

(For the Medical Gazette.)

[Continued from p. 764.]

*The capability of the great sympathetic nerve to convey disordered impressions to a remote seat.*

WHEN by mechanical violence, or other means of excitement, a strong impression is made upon a nerve in its course, or at its root, the effects are not perceptible at its central part, or at the part irritated, but are commonly observed at its extremity; and when any nerve is irritated between its origin and termination, a sensation is felt as if some injury were inflicted on the part which it supplies.

In proof that the great sympathetic does not in this respect differ from other nerves, I revert to the authority of Mr. Swan. "I have been induced," he says, "to inquire how the body is usually affected after accidents. From that inquiry, I have been led to state, that, when a severe injury has been received, the ganglia of the great sympathetic become irritated, and, consequently, the parts to which they distribute nerves. This irritation may be communicated to many of the cerebral, and all the spinal nerves, producing, according to the part of the sympathetic most affected, tetanic spasms, varying in extent and complexity." M. Brechet also instituted a series of vivisections, with a view of elucidating the proper functions of the ganglionic nerves, and the following is the substance of his conclusions:—The ganglionic system is insensible, in its healthy state, to mechanical injury, but acquires sensibility when in a state of excitement for any lengthened period.

Dr. Segond, chief medical officer of the French marine at Guiana, notices, however, a form of disease which he considers to be essentially a neuralgia of the great sympathetic. It prevails to some extent in intertropical climates;

and it exhibits the ganglia in a highly morbid condition, and goes far to prove the correctness of the statements of M. Brechet. The following summary of the symptoms, and abnormal appearances presented by the irritated ganglia, is abridged from an article in Dr. Johnson's *Medico-Chirurgical Review*, October, 1838:—

There exists for several days a preliminary sense of oppression and discomfort in the abdomen (*malaise abdominal*), accompanied with a downcast icteric countenance, highly expressive of the uneasiness felt, and is speedily followed by inertion of all the functions of organic life, and general corporeal debility. The abdomen becomes excessively distended with flatus, but unattended with tenderness. There is frequent vomiting; at first only of the contents of the stomach, afterwards of a yellow or greenish acid bilious fluid. The stools, at first frequent and loose, soon become unfrequent and scybalous, and, after a short time, succeeded by costiveness. In four or five days, colicky pains occur, attacking first the duodenic, and afterwards the hypogastric region: they are of an intolerably lacerating character. The pulse is slow and unequal. The tongue white, moist, and dry, with but little thirst. The temperature is variable. The urine is scanty, and disordered in quality. After a while, great pain is felt in the region of the kidneys, along the spine, and in the extremities and trunk. The general debility increasing, the limbs become paralysed or convulsed; and finally, the cerebrum, sympathizing with the universal disorder, there are delirium, general convulsions, and perversion of the senses and intellect.

Being a disease seldom fatal, Dr. Segond had necessarily few opportunities of examination. The following, however, are the appearances witnessed in two cases after death; and they are interesting, as exhibiting unequivocal evidence of extensive lesion of the great sympathetic nerve. In the first case, the ganglia of the abdomen were of a reddish-brown or yellow colour, resembling agate, and hard, as if hypertrophied; their branches of communication were more apparent and voluminous than in the natural state. On the right semilunar ganglion a yellow spot was observed, not entirely

penetrating its substance. The solar plexus was increased in volume. The filaments and ganglia, having lost their natural softness, resisted and creaked under the scalpel, and were of a brownish colour spotted with yellow. The plexuses, also, which emanate from the solar, were large, more prominent, and more easily traced, than in the natural state; in fact, were in a state of engorgement.

The second case presented all the ganglia in a morbid state. Those of the thorax were very large, of a vivid red, and spotted here and there with yellow, and their branches more turgid than natural. The swollen ganglia of the abdomen presented a yet more unusual volume; their redness being not so great as, but their density greater than, the thoracic. The semilunar ganglia were also hypertrophied and cartilaginous. The solar plexus was equally enlarged, and its density much increased; and its secondary plexuses had undergone a like transformation.

The sequence of symptoms, arising from ganglionic irritation, is here exceedingly well portrayed. The pain is described as being of a twisting, tearing, and lacerating nature; apyretic, internal, and unincreased by pressure, radiating from the ganglionic system as its centre, and extending its influence to the limbs, and the remotest extremity of the body.

It is stated also by M. Pascal, that, during the colic at Madrid, he found the ganglia of the sympathetic diseased in a number of instances; and he attributed the affections of the limbs to their communications with the spinal nerves.

Colica pictonum, or Devonshire colic, according to Dr. Segond, is essentially a neuralgia of the intercostal nerve; and the cramps, and other painful affections of the extremities, which accompany an attack of Asiatic cholera, are occasioned by ganglionic irritation.

The experiments of M. Le Gallois show, contrary to the generally accepted notion, that the different portions of the medulla spinalis form centres, from which the nervous actions of corresponding parts of the body proceed without the intervention of cerebral influence. Mr. Abernethy, also, states his opinion, that disorders of the digestive organs sometimes affect the different portions of the medulla

spinalis, and produce disorders of the body and limbs, without operating, as was first supposed, through the medium of the brain. I am inclined to believe, that many of these disorders do not necessarily involve even the medulla spinalis in their action, but that the morbid sensibility in the expanded extremities of vital nerves is decidedly communicated from the seat of irritation.

"An impression made upon one part of the body will often produce a nervous affection elsewhere, at a distance from the original seat of disease, and where no obvious explanation of the fact presents itself. A disease in the liver will produce pain in the right shoulder; a disease in the heart produces pain in the back\*."

"A gentleman woke in the middle of the night labouring under severe pain in one foot, at the same time that some other sensations, to which he was not accustomed, indicated the presence of acid in his stomach. He swallowed a large dose of an alkaline medicine, and the pain in the foot immediately left him†."

The late Dr. Wollaston's statement of his own case is familiar to every one. He ate after dinner some ice-cream, which his stomach seemed incapable of digesting (or rather, I presume, checked the digestion of a hearty meal). Some time afterwards he found himself suddenly lame, from a violent pain in one ankle: he became sick, the offending matter was rejected from the stomach, and he experienced instantaneous relief.

A medical gentleman informed me, a short time since, that, travelling once by sea, he was suddenly seized with an acute and agonizing pain in the supra-orbital branch of the fifth, which persisted until free vomiting ensued, during which a quantity of bile was ejected from the stomach. In this instance we are enabled to trace a succession of phenomena, the effect of a complicated reaction. The organ primarily affected is the brain, with which the liver secondarily sympathized; a quantity of an irritating fluid is regurgitated into the stomach, and the nerves of a remote seat are spurred into inordinate and morbid action through the agency

\* Brodie's Constitutional Origin of Disorders.  
† Ibid.

of the great sympathetic. Practitioners will have no difficulty in recalling to their remembrance many similar cases.

A nerve morbidly excited will produce what Bichat has denominated "exaltation of function," by vascular congestion, and irritation of the nerve itself, and even of contiguous parts from which the nerve derives its arteries, upon the due action of which the ordinary performance of its function depends, and by which the ordinary attributes of the nerve are increased. And since local determinations of blood to the surface are found to produce excessive development of nervous energy, as is proved by its influence upon the capillaries in increasing heat, it is probable that congestion of the vessels of the neurilema of the trunk of a given nerve, especially if accompanied with arterial excitement, may occasion similar results in the ultimate distribution of that nerve\*.

When, however, decided inflammatory action has not presented itself, dissections fail, as Brodie observes, to disclose the nature of the primary affection which gave rise to the pain: the natural sensations of the part may be increased, diminished, or otherwise perverted, although no disease exist in it which our senses are able to detect either before or after death.

After *tic douloureux*, indeed, has been of long standing and of unusual severity, there is no doubt that a morbid thickening of the neurilema may take place, and that it may be accompanied, in some cases, by a reddish, or even violet tinge, and studded with ecchymoses, as observed by Martinet: in other words, long-continued and violent morbid actions may produce genuine inflammation: this event, however, is not of frequent occurrence. The Baron Larrey describes it as a chronic inflammation of the neurilema or investing sheath; but his conclusions are drawn from dissections of the most violent cases.

Thus perhaps we are warranted in arriving at the conclusion that *tic douloureux*, in the great majority of cases, is not of inflammatory origin: dissections fail to indicate the slightest trace of inflammatory action: the pain also frequently shifts its seat with incredible rapidity, is produced coincidentally

with an offending cause, fixes on a part instantaneously, after a lengthened period of perfect repose, and is seated in the remote extremities of nerves at a distance from the original seat; the intervening nerves, meanwhile, although the medium of communicating the depraved influence, retaining their integrity. Pressure upon the part affected is not only endurable, but is frequently resorted to by the sufferer as the only available means of alleviating his agony.

Lines of demarcation have been attempted to be drawn around neuralgic affections, so as to isolate the species, and it has been suggested that the pure idiopathic form alone should be called by the forlorn designation, *tic douloureux*. I must confess that this appears to me to be a distinction without a difference; and if future investigations shall prove (which I verily believe they will) that all the forms, with the exception of those caused by mechanical injury, acknowledge a common origin, neuralgia wherever occurring, whether recent or chronic, inflammatory or apyretic, will be found to be still *tic douloureux*, differing only in different individuals, according to their idiosyncrasy, in seat, intensity, and degree.

[To be continued.]

## ON THE DIVISION OF MEDICAL LABOUR.

BY ROBERT HULL, M.D.

(For the London Medical Gazette.)

### *The General Practitioner.*

HOWEVER insignificant any writer may be, if he fairly expose to the clear vision of English readers a real grievance, he will ever find in most of them a readiness to redress. Until they understand the business, they are at liberty to suspect the motives of a denouncer.

I have undertaken, from a sense of duty, and in honest indignation, to portray the dangers which menace the general practitioner, through certain modern irregularities of the physician. I have watched the results of his marauding over the domain of the surgeon; and I foresee that, unless "this monstrous and ruinous infringe-

\* Ley on Laryngismus Stridulus.

ment on the right of the general practitioner be put down," as your manly correspondent words it, this useful, this indispensable class, will be mortally damaged. They cannot protect themselves, so far as my observation extends. It is, therefore, "the duty of the Colleges to contrive effectual protection."

The bad taste of using the title of doctor by the surgeon, has for many years been occasionally displayed; but his assumption of the physician's office in public hospitals is entirely novel, and without precedent. It is the most audacious of the revolutionary proceedings in physic. It is fatal, if it extend. I have no personal animosities nor fears; I contend for my profession and my brethren; and I warn these, throughout the country, to be on the alert. If they adopt the maxim of concession, they will be undone; it has failed in the political arena; it must fail in the medical.

I expect the professional staff of every hospital to inquire into its laws; and if there be no law for expelling the physician who acts chirurgically, to pass one without delay. No personal hostility can be charged, unless there be already an irregular within the walls. Nor is this exhortation needed only for the provinces. Already the metropolis is infected. I could scarce believe my vision when I read the report of a recent trial in the pages of the GAZETTE. What added force does this remarkable narration give to my prophetic fears and warning?

If the hospital staffs defer a supervision of their laws until an irregular compel them, they will have to struggle with the public, who are "no judges of medical etiquette; who generally favour the wrong party," which is "supposed to be a sufferer from jealous" feelings. Then, possibly, would arise the propriety of an universal resignation on the part of the protesting officers,—a conduct too magnanimous to be hoped, so far as I have seen. The heroes quoted by the "General Practitioner," and those formerly of the Aldersgate Dispensary, are the only martyrs on record.

Again, I caution the village practitioners against a vain idea, that an irregular physician cannot injure *them*. That they are secure from harm, like female innocence, in their deep and

distant glades. What assurance have they, that any gentleman, whose delicacy does not preclude an infraction of the general customs of the profession, shall religiously observe the particular? He who pockets with avidity the charges of the surgeon, may perchance diminish the fees of his own order—may ask such minor remuneration, that it may suit the country-people to repair to head-quarters, since Dr. Omnibus is cheaper than Mr. Villars. The payment of the country surgeons is so lamentably unjust, that he must wear a very selfish heart who would ever decoy a solitary patient away from them. No class of men, educated gently, is so ill requited as the country surgeons: yet even their inadequate remuneration is more perilled by a doctor-surgeon, than by the approaching Peelian tax.

The ignorance and apathy of the rural surgeons, in this vital matter, are extreme. They are honest, and therefore credulous. They are implicated in great emergencies, and want aid; and they forget, in their own true English hearts, that the only legitimate consultant is he who practises legitimately. If they want a surgical counsellor, why summon a physician? If they contend that their consultant is a *bonâ fide* surgeon, why does he hoist the physician's colours?

It is desirable that manly virtue should be displayed wherever it is needed; that the humblest rural surgeon, when summoned by the parson, or the squire, or the lord, to meet an irregular, should firmly decline. But we can pardon, in such peculiar, trying circumstances, the reluctant conceder. But, cheu! if the ruricolous practiser cannot be firm, the urban, so far as I have seen, cannot be trusted. I narrated in my last paper a lamentable defection, from the professional standard, of all the surgical magnates of a district—city and hospital men.

To me this painful pusillanimity was decisive that the Colleges must interfere. This abandonment included conservatives, in the extended sense of the word, whose sentiments on the greater topics can never hereafter be valued as very weighty. That is only verbiage which is not practical: wholes include parts.

No pressing poverty sued for condonation. It was a scene of selfishness—

all discipline lost—all regard to the general weal—all conference for mutual safety. No cry of the unflinching in a holy cause—"God defend the right"—but a pitiful, unsuccessful, self excusation, when the desertion became notorious—*sum quisque flagitium aliis objectantes*.

Sir James Clark has added his high name to the list of reformers; but his propositions are as open to comment as those of the most obscure and fidgety malcontent.

—"Stulta est clementia, cum tot ubique Vatribus occurras, perituræ parcere chartæ."

If all junior practitioners were to be bachelors of medicine, then all would be "doctors;" for Oxford and Cambridge have long since allowed this latter designation to their medical bachelors. This title, therefore, would be claimed for ever by the most juvenile members; all practical distinct denomination lost. Such a scheme would lead to most unpleasant collisions, and is fraught with insubordination.

Matters are better on their present basis than hazarded on a speculation, which implies *diruit* before *ædificat*.

No reform can be concocted, except *efficient power* given to the Colleges and Hall, which can benefit the general practitioner, procure him more patients or more pay. He knows, he must know, that the present arrangement, whereby he charges for medicines, is the best for him—the only mode in which he could approach remuneration. The farmer patient, the *avarus agricola*, although

"Illius immense ruperunt horrea messes,"

would never pay him for skill, time, sedulity. The farmer must have something for his money, tangible, odoriferous, coloured. He wants "doctor's stuff." As it is, he grumbles, as regularly as Christmas comes round, that his bill is so great, and the articles so few. Drench him, Mr. Villars; stuff him; but let no cheap "doctor of skill" approach his domicile; whose prescription and druggist's charge beside will be less than your most moderate demands.

Depend on it, the safest, wisest policy for all parties, is to maintain our ancient customs. Some envious and levelling spirits, who dislike the order of physicians, simply because it is su-

perior to their own, are found egging on the marauder, hoping *he* will degrade that hated caste. They even back him with attempts at argument, "that the physician has a right to practise surgery, if the surgeon is called in as a physician."

Mr. C., or D., or E., is indeed consulted—summoned, perhaps, to a great distance. But he goes as Mr., not Dr. C.; receives the consultant's fee, and retreats again to his domestic circuit of general practice. This is no evil to any body nor interest; but it is honourable to this gentleman that, so great his fame, so undisputed his merit, he is called out of his diurnal circle, of a surgeon-apothecary, and employed, *pro hac vice*, as a consultant in physic. Not called out of his department, for he is a practiser in medicine; not to the annoyance of the gentleman "over" whom he is called in; for if this be likewise a general practiser, he cannot object to a more famed man. If he be a pure physician or surgeon, he may object, if he likes. I have known rejection practised, the physician declining to meet the general performer. I have known the physician hail the advent of the surgeon-apothecary, as bringing to the case a racy intellect, appropriate acquirements, grave experience.

In fine, every enormity has its advocates; and professional aberrations are not excepted. Good sense will ultimately prevail. I will not despair of the healing art, nor of its members, although at present

Τὸ μὲν ἔσπετον ἔχει  
Δύναμιν ἃ δ' ἄρετὰ κατόπισθεν  
Θνατοῖς ἀμελεῖται,  
'Λογία δὲ νόμων κρατεῖ.

## MEDICAL GAZETTE.

Friday, September 9, 1842.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

## MEDICAL CRITICISM.

It is obvious that criticism, in some form, must be as old as writing. The earliest inhabitants of the east, when



entertained with the narrations of their story-tellers, must have expressed some opinion upon the merits of those wandering historians or novelists; and when a more polished age reduced their essays to writing, the very attempt presupposes analysis, choice, and correction—very estimable branches of criticism.

As time wore on, and the several learned professions separated from each other, so also criticism became a distinct branch of literature; and as these professions have broken into many subdivisions, so medical criticism has left the great tree, and, like a vigorous shoot, has become a plant of itself.

In looking back to the beginning of the last century, it is curious to see the strain in which authors talk of critics. They are represented as fierce bulldogs, ready to tear every one to pieces; while the timid author endeavours to appease their ferocity, as an unwelcome intruder might throw a sop to some barking watch-dog, the guardian of the mansion which he would enter.

Matters have changed since the days of Queen Anne; and to us the danger at present seems to be on the other side,—at any rate in our profession. The watch-dogs are too often fawning spaniels, who expose the inmates of the house to danger by their treacherous inactivity. “But what do the public lose,” it may be asked, “by the criminal leniency of their critical guardians? Does not every book find its level sooner or later?” It does; yet in the interim two things are lost—time and money. And time, besides being the stuff of which life is made, has a marketable value. Medical days are appraised at some two guineas each, and paid for accordingly out of county rates to medical witnesses. So that a practitioner seduced by a bad review into reading a trashy book, might bring his account against it somewhat as follows:—

Paid for Surgeon Bragge's work	£	s.	d.
on Diseases of the Liver :	0	12	0
Less eighteenpence obtained by			
sale of same (say)	0	1	6

Balance 0 10 6

Add for four days lost in reading			
the same, at two guineas a day	8	8	0

Total loss 8 18 6

Our attention has been lately drawn to this instructive subject by an article in a French contemporary, the *Gazette Médicale* of August 27th. It is in the form of an answer, addressed by an old critic to a young practitioner. The writer, who signs himself R. P., and whom we recognize as one of the best *feuilletonistes* of that journal, endeavours to dissuade his young friend from the arduous and ungrateful employment of a reviewer. He begins with the same piece of advice with which he ends—“give up your scheme; don't write.” Appearances are here, he affirms, singularly deceitful. It seems fine to judge one's equals, and even one's superiors, and pronounce decisions both just in substance and elegant in form. But, alas! this self-appointed power is not recognized by any one, and if exercised by talent will make the possessor far more hated than loved; for gratitude is feeble and short-lived, while pride and self-love are implacably rancorous. So dangerous is the art of criticism, that, in R. P.'s opinion, it has been almost given up both in literature and science. The place of genuine reviewing has been taken by satire and panegyric; namely, violent attacks upon adversaries, and common-place panegyrics upon persons whose vanity is more easily satisfied, than their labours can be appreciated.

Nothing is more rare or more thankless than true criticism; that kind which is founded on perfect equity, and whose rule is *ut bono bene, malo male sit*.

Then, independently of prudential considerations, the task is difficult in itself. First of all, it requires the most complete knowledge of the subject treated in the book reviewed. A superficial acquaintance with it will not suffice. For, supposing the book to be a tolerable one, the reviewer has to pass his opinion on an author who has long meditated on the subject of his work, has studied it deeply, and under new aspects. Hence, the reviewer should be at least on a level with his author in what regards the present state of the topics discussed; in addition to which, he must weigh and appreciate the new ideas of the book, if there are any; must determine their import and bearing; must indicate the author's starting-point and goal, the track he has followed, and the probable destiny of his book.

This is, of course, on the supposition that the young censor's essay is to bear the stamp of that polish and completeness which shews that he respects the public and himself. He is not to resemble those mock critics who just peruse the table of contents, read a page or two of the treatise with an absent air, and then compound an article *stantes pede in uno*; nor those ignorant reviewers, who, comprehending neither the ideas nor the plan, nor the object of the author, make havoc among good books.

This style of reviewing is, no doubt, most illaudable, and grievously disappoints the reader who is in search of information; but we do not ourselves think that it makes any serious difference to the author. A good book has something so vivacious about it as not easily to be destroyed:—

Nec ignis,

Nec poterit ferrum, nec edax abolere vetustas:

far less a reviewer who does not cut it open, or, when cut open, cannot understand it.

But if true criticism is the product of toil and truth—if, in addition to deep knowledge, it requires taste, judgment, logic, method, perspicuity, patience, and clear-headedness—it asks for a combination not easily found. Without them the would-be censor falls into that facile mediocrity which is indelibly stamped on so many publications of our day.

But suppose the critic to possess these rare qualities, and to have formed a correct judgment; a still greater difficulty remains, the difficulty of pronouncing it. If the critic is an honest man, he knows that to speak well of a bad book is to bear false witness; and he equally abhors any thing approaching to party spleen, or attacks on private character; any thing, in short, which, though legally safe, is morally infamous. Such a man will utter the truth as he feels it, without hesitation or reserve, without using a magnifying or diminishing glass. In this case, the reviewer's fate is hard and lamentable; R. P. compares it to being thrown into the lions' den. There is no fact more certain than that the most extravagant praise lavished in the most preposterous manner is always well received; while true criticism, however just, moderate, and polite, always wounds its object, and seems to leave its sting in the wound. Let us imagine that a man with a very slight tincture of anatomy, pathology, natural history, and so forth, believes himself clever enough to write a book; why, after all, it is merely a folly to which time and the good sense of the public will speedily do full justice.

But if you set about proving to a man of this class that his book was not a *besoin généralement senti* in science; if you unfold his mistakes, his plagiarisms, his nonsense; if you show him that he has lost his way in the wastes of mediocrity and insignifi-

cance; that he has seen and observed nothing but what had been seen and observed before him, and that he has made up his bundle of sticks in other men's woods; if you tell him that he constantly falls into truisms, i. e., dull truths announced with pretension; that he fills up the void of his ideas with the artifices of sophistry and the tinsel of pretty words, your task becomes painful as well as difficult.

Almost every author is pleased with the product of his own wits; he swells a grain of sand into a mountain, and imagines his book to be a *monumentum ære perennius*: this is human nature all over. But imagine the feelings of such a man, when some unlucky critic sets about examining the substance of his work with the most perfect indifference, and estimates it at its intrinsic value; when he demonstrates that the author was not a match for his subject, and that his book is a collection of well-known facts and common ideas; in short, that it is a manufacture, and not a work. The censure is, no doubt, clothed in the politest forms, and oil has been poured on the whetstone: but in vain; for authors refuse to take the sour with the sweet. Their disappointment is entire; they have not been praised without restriction; and, therefore, in their dialect, they have not been understood, and have been unfairly judged. To hear them talk, censure is always the effect of some animosity, secret or open, with or without an object.

Such, or nearly such, are some of the principal opinions expressed by R. P. in his instructive letter; and the rest are, for the most part, sensible and *piquantes*. But he certainly pushes his pleasant warnings to an extravagant length, when he cautions his friend against writing a good treatise. He asserts that, unless one lowers oneself by writing an advertising book (*livre-*

*affiche*) or a prospectus, the pen is a bad means of making a reputation; and he seems to think that a work full of facts and originality might do its author disservice. The truth is, that a good practical work will always be of service to its author; but the nature of the reward which it obtains for him will depend on the class to which the book belongs. The writer whose works are purely physiological, for instance, must not complain that they do not procure him the reputation of a practical physician or surgeon: if they crown his brows with scientific laurels, he has no reason to murmur against the distribution of honours. This may serve as an answer to the accusation often levelled against the contemporaries of Harvey, as not worthily appreciating his medical skill.

We must confess that the style of reviewers in this country is often so little calculated to give a true notion of the work reviewed, and is so apt to degenerate into mere puffing, that the inexperienced are too frequently led astray by these pretended luminaries. We would, therefore, counsel our younger readers, as a general rule, to study works of established reputation; and, when these are insufficient, to be guided in their further choice by those friends who have a real knowledge of the subject. If they inspect reviews, let them be led, not by general commendations of the work in question, but by a *jugement motivé*; for while the puffer praises in vague terms, the laudatory but honest reviewer will tell us in what points Mr. Z.'s treatise differs from the previous ones upon the same topic, and excels them by its differences. Lastly, we would exhort those whose ambition pushes them on to write, not to hanker after newspaper applause, not to trust too much to a taking title-page, and not to consider every impartial critique as a hostile one.

SKETCHES OF AMERICAN PHYSICIANS.

NATHANIEL CHAPMAN, M.D.

PROFESSOR CHAPMAN is the Sir Henry Hallford of the United States. He is not more distinguished for professional attainments than for courtliness and vivacity of manner, wit, knowledge of the world, and literary taste. His private character forms a marked contrast with that of his late friend and contemporary, Physick, with whom he so long shared the first rank in the profession of Philadelphia. Physick, who shunned general society, and was little known except in professional intercourse, had a reserved stateliness of manner from which he never unbent. Engrossed by his patients and profession, he seldom entered into the everyday topics of life, and is remembered only as the skillful surgeon and successful operator. Chapman's temperament was cast in a different mould. Eminently social in disposition, with a gaiety of spirit that has not flagged with years—a wit—a punster—delightful as a companion, and enjoying company, he has, for a long period, occupied a position, we may say unrivalled, in the society of this city. To these brilliant qualities he unites the kindest feelings. His wit is without malice, and he is frank, open-hearted, and open-handed. It is not, then, surprising that he is individually as popular as he is professionally eminent.

Dr. Chapman was born in Fairfax county, Virginia, on the 28th of May, 1780, and has therefore nearly completed his sixty-second year. His paternal ancestor came to Virginia with the first colony, was a captain of cavalry in the British army, and, according to an authentic tradition in the family, was the youngest son of a cousin-german of Sir Walter Raleigh. The family settled on the river Pomonkey, some twenty miles from Richmond, but the branch from which the doctor is descended, migrated about a century and a half ago to Maryland, and fixed itself on an estate on the banks of the Potomac, nearly opposite Mount Vernon, which is still in their possession. The doctor's father, however, went to Virginia, upon his marriage, where he afterwards remained.

Dr. Chapman received his early education at the Classical Academy of Alexandria, D. C. founded by General Washington, where he was six years. He subsequently spent a short time in two Colleges, though not long enough to owe either any obligation. He came to Philadelphia in the autumn of 1797, to commence the study of medicine with the late Professor Rush, of whom he became a favourite pupil. He continued three years with Rush, and in attendance upon the lec-

tures at the University of Pennsylvania, from which he received his degree in the spring of 1800. The doctor's thesis was on hydrophobia, written, we have been told, at the request of Dr. Rush, in answer to an attack upon his favourite theory of the pathology of that disease. Dr. Chapman had, we believe, previously prepared another thesis, on the sympathetic connections of the stomach with the rest of the body, which he afterwards read before the Philadelphia Medical Society. This contained the substance of the peculiar views on fever and other diseases, as well as the *modus operandi* of medicines, which he has since taught. While a student, Chapman found time to become a frequent contributor to the *Port-Folio*, a magazine of some celebrity in its day. His contributions under the signature of Falkland, had considerable popularity.

In 1801, he went abroad, and spent four years chiefly at Edinburgh and London. He remained a year in London, the private pupil of Abernethy, and thence passed to Edinburgh. Edinburgh was then celebrated equally for her school of medicine and her literary and scientific society. Students of medicine resorted thither, as now to Paris, from all parts of the world. Nearly all our American physicians of the olden time, Morgan, Shippen, Kuhn, Rush, Wistar, and many others, received their education at Edinburgh. It may be supposed that Dr. Chapman made the most of his opportunities in the distinguished circles of the modern Athens. He was enabled to see not a little of the eminent persons of those days, and enjoyed considerable intimacy with Dugald Stewart, the Earl of Buchan, and Brougham\*, then a fellow student. Before his departure from Edinburgh, Lord Buchan gave him a public breakfast, on the birth-day of Washington, at which a number of distinguished persons were present, when he took the occasion to entrust him with an interesting relic, valuable from a double historical association. Lord Buchan had presented to General Washington a box made of the oak that sheltered Sir William Wallace after the battle of Falkirk, with a request to pass it, in the event of his decease, to the man of his country who should appear to merit it best." General Washington, declining so invidious a designation, returned it by will to the Earl, who committed it to Chapman, to be delivered to Dr. Rush, with a view to its being ultimately placed in the cabinet of the

\* In 1809, Dr. Chapman republished here Lord (then Mr.) Brougham's Speech before the House of Commons on the British Orders in Council, with a biographical sketch of him, in which he predicted his future eminence. Lord Brougham was then quite a young man, little known in this country.

college at Washington, to which General Washington had bequeathed a large sum.

Dr. Chapman returned to this country in 1804. He established himself in Philadelphia, where he soon afterwards married. His attractive manners and reputation for talent secured his almost immediate success in practice. He became the favourite physician of a large portion of the higher classes of Philadelphia, and has continued for more than thirty years to occupy this position. He was the physician and confidential friend of the Count de Surveillier's, (Joseph Bonaparte) during his long residence in Philadelphia and its vicinity. From the Count he gathered a large fund of interesting anecdote of the illustrious brother of the ex-king, and the men and scenes of his eventful times, from which the doctor occasionally draws. In his day, Dr. Chapman has seen much of the prominent statesmen of the United States, and, though never entering into politics, he is familiar with the personal history and character of most of our public men. He was summoned to the death-bed of General Harrison, though too late to assist in the treatment.

As a practitioner, Dr. Chapman is distinguished as much for the charm of his manner in the sick chamber, as for skill and success in prescribing. His lively conversation and ever-ready joke are often more effective than anodyne or cordial. Indeed, in cases of trifling importance, the doctor sometimes prescribes little else. In pleasant chit-chat, both patient and physician forget the object of the visit, and the doctor will depart and "leave no sign," for pill or bolus. But, when roused by symptoms of actual severity, Dr. Chapman is almost unequalled in resources, as he is devoted in attentions. Hence, as a consulting physician, his great powers are particularly conspicuous. Rapid and clear in diagnosis, inexhaustible in therapeutics, self-relying, never discouraged, never "giving up the ship," he is the physician of physicians for an emergency.

Dr. Chapman is best known abroad as a writer and a lecturer. Not long after his return home, he published a work entitled "Select Speeches, Forensic and Parliamentary," with critical and illustrative remarks, in five 8vo. volumes, which attracted much attention. He has since, however, confined his pen to scientific topics. The year of his return, 1804, he gave a private course upon obstetrics, which proved so popular, that, in 1806, at the age of twenty-six, he was elected adjunct to the chair of Midwifery in the University, and soon afterwards to that of the *Materia Medica*. His colleagues of that day, Shippen, Rush, Wistar, Physick, James, are gone, and he remains the senior professor in the University, and, doubtless,

the oldest lecturer on medicine in America. The course of lectures on *Materia Medica* is beyond the memory of the writer of this sketch. The views and arrangement adopted by the lecturer may, however, be inferred from his "Therapeutics," to which allusion will be made. At the death of Rush, in 1812, Chapman was transferred to the chair of Theory and Practice, which he has ever since filled.

The lectures of Professor Chapman, annually delivered to large classes during a period of thirty years, are of course familiar to no small portion of the profession of the United States. We but reflect general opinion, in pronouncing them erudite, elaborate, and highly-finished compositions, enriched with the stores of the most varied reading and of ample and personal experience. The professor has, we believe, continued to retain, as the basis of his course, the original draft at first prepared, although many lectures have been rewritten, and the whole often remodelled. Keeping pace with the progress of medical science, Professor Chapman is yet slow to adopt, certainly to give currency to, what are termed the novelties of the day. On a few subjects his opinions differ from those generally received. His views of fever are of the ultrasolidist school, and of course at variance with the prevailing doctrines. It is foreign to our purpose, however, to canvass these points critically. Dr. Chapman's delivery of his lectures is animated and emphatic. His voice is clear, not of great volume, but so highly pitched as to seem loud. A slight nasal intonation gives it a peculiarity not unpleasant when the ear has become familiarized to it.

In addition to his courses at the University, Dr. Chapman for a long period gave clinical lectures in the hospital of the Philadelphia Alms House. He has moreover, for upwards of twenty years, delivered a summer course of lectures in the Medical Institute. This institution was founded by Dr. Chapman, although, as we learn, he has never participated in the fees, or exercised any control over the appointments to the chairs. In days of yore, the doctor was a leading debater at the Philadelphia Medical Society, when the floor of that society was a field in which the ablest members of the profession met in earnest and often vehement discussion. Dr. Chapman has several times filled the honourable post of President of the Society. He is now the Senior Vice-President of the Medical Philosophical Society, and has, we believe, been chosen corresponding member of most of the learned societies of Europe.

Dr. Chapman's principal work is his "Therapeutics," published in 1817. It has gone through seven editions, one surrepti-



tious; but the doctor has since refused to have it reprinted, until he finds time to bestow on it a thorough revision. The "Therapeutics" has enjoyed a long popularity. It is written in a very attractive style, and, as is well known, is thoroughly impregnated with most of the peculiar and original views of the author. It is perhaps hardly necessary to observe, that some of these are not in accordance with the opinions of a large portion of his professional brethren—as, for instance, the theory of the *modus operandi* of medicines.

In 1820, Dr. Chapman commenced the publication of the "Philadelphia Journal of the Medical and Physical Sciences," which he continued to edit for many years. The journal was undertaken with liberal views—the doctor never receiving a salary for his services. He has since been an occasional contributor to different periodicals. A large number of his lectures have been published in the previous volumes of this journal—elegantly written and standard monographs on a variety of subjects.

We feel that this sketch does very imperfect justice to one of the brightest ornaments of the profession. It has, however, the merit of being executed in a spirit of entire candour.—*Philadelphia Medical Examiner*.

## PREPARATION OF DECOCTUM ALOES COMPOSITUM.

MR. MADDOCK, of Tunbridge Wells, in a communication on this subject, alludes to the great difference which exists in this preparation, as obtained from different houses; and ascribes this difference to the length of time during which it has been kept—the aloes and myrrh being gradually deposited, until at last the decoction is left nearly destitute of these ingredients.

He says, "The plan I adopt is to follow the Pharmacopœia implicitly, as to articles and quantities ordered; but instead of boiling the saffron with the other ingredients, I first make an infusion of it in a small quantity of boiling water, which infusion is added to the tincture, and the almost spent saffron added to the other articles, to be boiled the proper time, completing the process by an accurate attention to the quantity of the required product. By this means much of the flavour of the saffron is preserved, which, by boiling, is dissipated to a great degree; but the question is, What is next to be done? I would beg to suggest, that the decoction should be allowed to stand twenty-four hours to cool and deposit, after which it should be filtered through paper; and subsequently, whenever used, that the

deposit that will still continue to form, should be as much as possible combined with the decoction by agitation, so that something of an uniform preparation may be kept by all."

We agree with Mr. Maddock that this preparation is subject to considerable variation, resulting not only from the degree of care which is bestowed in making it, but also from changes which necessarily take place, and which occur when no deviation has been made from the instructions of the Pharmacopœia. It is very desirable, therefore, that some means should be devised whereby the uniformity in appearance and operation of this valuable medicine may be ensured.

The principal cause of the deposition of so much of the aloes, when the decoction has been kept for some time, may be traced, we believe, to the action of the heat during its preparation. A large proportion of the aloes and of the myrrh is soluble in solution of carbonate of potassa, even without the aid of heat; the insoluble parts being, according to some eminent authorities, more highly oxidized in their constitution, and more irritating in their effects, than those that are dissolved by this menstruum. By the continued application of heat, a change is effected in the soluble constituents, which are thus rendered to a certain extent insoluble, while the mucilage of the myrrh, together with the extract of liquorice, tend to prevent the immediate deposition of the insoluble particles: a portion of the volatile oil of the saffron is also driven off during the boiling.

Thus, upon the care bestowed in preparing it, upon the degree of heat applied in the boiling, will in a great measure depend the constitution and the effect of the medicine; and as it is impossible, according to the instructions of the College, to define or to regulate exactly the heat applied, it follows as a necessary consequence that decoction of aloes made according to the Pharmacopœia is seldom met with twice alike.

A preparation possessing, we believe, all the properties of that designed by the College, and not subject to the same variations, may be obtained by making an *infusion* instead of a *decoction*, and we trust the College, in a future edition of their Pharmacopœia, will consider the propriety of making this alteration in the formula: it would be in strict accordance with the mode of proceeding directed in another case, namely, that of the purified extract of aloes, in which the aloes is ordered to be macerated with the water at a gentle heat for three days, and the clear liquor decanted from the dregs.—*Pharmaceutical Journal*.

ON THE  
VARIETIES OF HYOSCYAMUS.

BY JON. PEREIRA, M.D., F.R.S. & L.S.  
Assistant Physician to the London Hospital.

IN the last number of the Pharmaceutical Journal is a communication from Mr. Houlton, on the annual and biennial *Hyoscyamus niger*, from which I gather that he suspects them to be distinct species, as he says "I am not at present able to determine the botanical relation of the annual to the true *Hyoscyamus niger*."

Having carefully examined both plants, I have no hesitation in declaring them to be one and the same species—an opinion which I have expressed in the 2d edition of my "*Elements of Materia Medica and Therapeutics*," vol. ii. p. 1222. The biennial variety is larger, stronger, and more branched than the annual one. In the *Botanical Magazine*, 2394, is a drawing of the latter, which the editor regards as a variety of *Hyoscyamus niger*. Both varieties have long been used in medicine, and are cultivated at Mitcham; but their relative degree of power has yet to be ascertained.

It is curious to observe the different statements of botanists as to the duration of Henbane. Linnæus, Alston, Bergius, B. I. Andrew Murray, Persoon, Woodville, Lindley, and the editors of the *Beschreibung officineller Pflanzen*, declared it to be biennial; whereas, Hudson, Withering, Smith, Hooker, Richard, A. T. Thomson, and the editors of the *Handbuch der medicinisch-pharmaceutischen Botanik* state it to be annual. It is remarkable that, in the two works just quoted (the *Beschreibung* and *Handbuch*), of both of which the late celebrated Professor T. F. L. Nees von Esenbeck was part editor, the duration of this plant is so differently stated.

Loudon, Geiger, and I. L. Wheeler, declare, correctly as I believe, that the *Hyoscyamus niger* is both annual and biennial; and in a letter which I received some months since from Sir W. J. Hooker, he says the *niger* "ought to be marked 'annual or biennial.'"

*Hyoscyamus niger* differs not only in its duration (annual or biennial), but also in the simple or branched condition of its stem, in the depth of which the leaves are incised, in being more or less hairy, in its flowers being sessile or subsessile, and in its corolla being either more or less strongly marked with violet veins, or even entirely yellow. In consequence of this, some botanists have been led to describe varieties of *H. niger* as distinct species. Thus the *H. agrestis* of Kitaibel, and the *H. pallidus* of the same botanist, are merely varieties of *niger*. I

am supported in this statement by the high authority of Sir W. J. Hooker, who tells me that he has, in his Herbarium, native specimens of both *H. agrestis* and *pallidus*, and he has no "hesitation in saying that they are identical with *H. niger*." Moreover, Brandt and Ratzeburg, in their *Deutschlands phanerogamische Giftgewächse* (p. 60), observe: "From our examination of Kitaibel's original specimens in Willdenow's Herbarium, as well as from our observations of numerous plants of black henbane during their whole development from seeds, we are led to regard *H. agrestis* as a variety merely of *H. niger*. The distinguishing characters assigned, by different authors, to the former, are all found in the latter plant. *H. niger* is a true annual. It occurs small and large, as well as with or without a branching stem. Both the radical and lower cauline leaves are invariably stalked; the middle cauline ones are broader or narrower, ovate or oblong, with larger or smaller teeth. The flowers have shorter or longer stalks. The uppermost cauline leaves are always more or less entire. Lastly, on the same plant we find variations in the intensity of the colour of the corolla. So that of the characters distinguishing *H. agrestis*, as given by Schultes, Roth, Mertens, Koch, Bluff, and Fingerhuth, not one is left on which we can found its claim to be regarded as a distinct species—or scarcely even as a variety  $\beta$  minor.—*Hyoscyamus pallidus* is distinguished merely by the absence of the violet reticulated veins of the corolla, and, therefore, may be compared to the white-flowered varieties of plants, which normally have coloured flowers. It is obvious, therefore, that this cannot be admitted as a specific character."—*Ibid*.

47, Finsbury Square,  
August 8, 1842.

THE RE-UNION OF DIVIDED  
NERVES.

THIS is an account of some experiments performed on dogs, by Dr. Bidder, of Dorpat, to ascertain the possibility of uniting nerves possessed of different functions with one another. The nerves chosen were the lingual and hypoglossal, as they lie in close relation to one another beneath the mylo-hyoideus muscle. The division of the lingual was attended with violent convulsions of the whole body; that of the hypoglossal appeared to excite scarcely any pain. The cut extremities were joined by means of a fine silk thread passed through them, in different relations; in some instances the central end of the hypoglossal was connected with the peripheral extremity of the lingual;

in others the central end of the latter with the peripheral of the hypoglossal.

The operation was immediately followed by complete loss of motion and sensation on the corresponding side of the tongue, which was thrust against the teeth, and often wounded by them. It was very difficult to ascertain the degree in which sensation was restored; but it appeared in some instances to be so completely regained, that no difference was perceptible between the sound and operated side, whereas in others the insensibility to stimulus remained as great as it was immediately after the operation. With regard to the return of motor power, galvanic stimulus was applied to the trunks of the nerves, laid bare above and below the cicatrix; and irritation of the hypoglossal nerve, eighty days after the operation, was generally followed by more or less movement of the muscles which it supplies; their contractions being sometimes as strong as on the uninjured side. On the other hand, the application of stimulus to the lingual nerve was in no instance followed by muscular movements.

On examination of the cicatrix, the extremities of the nerves corresponding in function were often found united together in their normal relation, notwithstanding the care which had been taken to prevent it; or they were so amalgamated in one irregular cicatrix, that their mutual relation could be accurately decided; and although in a cicatrix, examined under the microscope, from 83 to 136 days after the operation, newly-formed primitive nerve-fibres could be readily distinguished, it was impossible to trace the same fibre, which had been seen in the extremity of one nerve, through the cicatrix into the other.

From the negative results afforded by the restoration of function, as well as by the anatomical examination after experiments of this sort, the author concludes that the possibility of effecting the union of nerve-fibres having different functions is in the highest degree doubtful; and observes, that if the tendency of divided nerves to preserve their natural relations be so strongly shewn when every obstacle is offered to it, we need not be surprised that, in the re-union of a compound nerve under favourable circumstances, the communication between the corresponding fibres should be preserved.—*Müller's Archiv.*

## RESULTS OF OPERATIONS IN THE PARISIAN HOSPITALS,

In this paper M. Malgaigne chiefly studies the causes which influence the mortality after amputations: 1st, he inquires which are the most serious amputations—those performed on account of disease, which he

calls pathological, or on account of injuries, which he terms traumatic. He finds that of 789 amputations there had been 524 pathological, and 193 deaths, that is to say 38 in 100; and 265 traumatic, with 130 deaths, or 49 in 100. He then divides them into greater and less amputations, the mortality in the former being 48 in 100 of the pathological, and 64 in 100 of the traumatic; in the latter 12 in 100 of the pathological, and 15 in 100 of the traumatic.

The question of primary and secondary traumatic amputations is, for various reasons, difficult to decide. M. Malgaigne has only been able to obtain the documents of 26 amputations in the thigh; of these 16 were primary and 10 secondary; of the former 12 died, of the latter 6; and 43 amputations in the leg, of which 33 were immediate and 22 died, 10 were secondary with 7 deaths: but from these few cases M. Malgaigne would draw no conclusions.

2. With regard to sex, the results are: great pathological amputations; men 280, deaths 138; women 98, deaths 44. Smaller amputations; men 106, deaths 9; women 40, deaths 2. Great traumatic amputations; men 165, deaths 107; women 17, deaths 10. Small traumatic amputations, men 73, deaths 13; women 10, deaths 0. On the whole, women recover better from amputations than men.

3. Age exercises a remarkable influence on the mortality. In great pathological amputations from 2 to 5 years, 4—2 deaths; from 5 to 15, 57—15 deaths; from 15 to 20, 66—28 deaths; from 25 to 35, 128—63 deaths; from 35 to 50, 72—40 deaths; from 50 to 65, 40—29 deaths; from 65 to 80, 11—5 deaths. In small pathological amputations from 5 to 15 years, 16—0 death; from 15 to 20, 27—1 death; from 20 to 35, 49—3 deaths; from 35 to 50, 33—5 deaths; from 50 to 65, 17—1 death; from 65 to 80, 4—1 death. In great traumatic amputations from 2 years to 5, 1—1 death; from 5 to 15, 9—7 deaths; from 15 to 20, 15—8 deaths; from 20 to 35, 65—39 deaths; from 35 to 50, 54—36 deaths; from 50 to 65, 30—21 deaths; from 65 to 85, 8—5 deaths. Small traumatic amputations from 5 to 15, 5—0 death; from 15 to 20, 12—1 death; from 20 to 35, 30—0 death; from 35 to 50, 28—8 deaths; from 50 to 65, 11—3 deaths; from 65 to 85, 3—1 death. Thus childhood, contrary to the generally received opinion, is the age in which traumatic amputations are most formidable. In pathological amputations the danger increases with the age; and especially in the female, as if old age commenced more early in her.

With regard to different seasons, M. Malgaigne finds that of 391 cases, 26 amputations took place in January—11 deaths; in February, 24—12 deaths; in March,

37—20 deaths; in April 28—11 deaths; in May 49—27 deaths; in June 46—27 deaths; in July 27—9 deaths; in August 45—24 deaths; in September 31—18 deaths; in October 32—15 deaths; in November 20—11 deaths; in December 26—9 deaths. So that in the four winter months, usually considered the most unfavourable, the mortality did not average one half, whereas in the months usually preferred it exceeded that limit. The autumn is the most unfavourable, next to it the spring; and the result is the same whatever be the nature of the amputation. Nevertheless, winter appears as fatal to young subjects as it is propitious to the more advanced.

M. Malgaigne next considers the relative mortality in the different Parisian hospitals, placing the Hôtel-Dieu sixth, and La Charité second in rank of success. In the most fortunate hospital for pathological amputations 1 death occurred in 5; in the least fortunate 9 in 10. In the most fortunate for traumatic amputations, 3 deaths occurred in 10; in the least fortunate all the patients who had been operated on died. M. Malgaigne does not pretend to explain this difference, but says it does not depend on the operator, as he does not carry his success from one hospital to another.

All surgeons, and especially MM. Ribes and Larrey, have considered a gun-shot wound of the middle of the thigh to be a case imperiously demanding amputation; but M. Malgaigne does not accede to this opinion; he considers this operation so dangerous, that he would prefer to leave the patient to the efforts of nature.—*Archives Générales de Médecine*.

RECOVERY  
AFTER  
EXTIRPATION OF THE UTERUS  
IMMEDIATELY AFTER DELIVERY.  
By M. Rossi.

A WOMAN of a feeble constitution had a good delivery; the placenta also came away easily.

The midwife who attended her having pushed her hand into the vagina, felt a tumor which she mistook for a second child. She accordingly pulled with such force at this tumor, which happened to be the uterus itself, that she tore it from its attachments, and then by means of a knife separated it from the vagina, and removed it entire. The woman, however, recovered in about thirty days. M. Rossi, who read the history of the case before the medical section of the Congress at Florence, exhibited the uterus which had been thus removed. He was far, however, from thinking that the same success would attend the removal of

the entire uterus in cancerous affections of that organ, as, in addition to the real difficulties and dangers of the operation, it was often difficult to tell how far the neighbouring organs were affected, or whether the disease might not return.—*Il Raccoglitore Medico*; and *Edinb. Med. & Surg. Journ.*

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
CERTIFICATES.

Thursday, September 1, 1842.

C. E. Strutt.—J. L. Gilchrist, Newcastle-upon-Tyne.—T. Nott, Bere, Blandford.

A TABLE OF MORTALITY FOR THE  
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, August 27, 1842.

Small Pox .....	12
Measles .....	34
Scarlatina .....	28
Whooping Cough .....	10
Croup .....	3
Thrush .....	8
Diarrhoea .....	67
Dysentery .....	4
Cholera .....	16
Influenza .....	1
Typhus .....	15
Erysipelas .....	4
Syphilis .....	1
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	151
Diseases of the Lungs and other Organs of Respiration .....	216
Diseases of the Heart and Blood-vessels ....	14
Diseases of the Stomach, Liver, and other Organs of Digestion .....	102
Diseases of the Kidneys, &c.....	5
Childbed .....	2
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	0
Rheumatism .....	3
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c. ....	1
Diseases of Uncertain Seat .....	119
Old Age or Natural Decay.....	61
Deaths by Violence, Privation, or Intemperance .....	23
Causes not specified .....	2

Deaths from all Causes ..... 895

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.  
Longitude 0° 3' 51" W. of Greenwich.

August.	THERMOMETER.		BAROMETER.	
Wednesday 31 <sup>st</sup> September.	from 47 to 61		30.04 to 30.11	
Thursday . 1	49	64	29.94	29.96
Friday . . . 2	63	74	30.06	30.14
Saturday . . 3	56	70	30.16	30.13
Sunday . . . 4	53	66	30.13	30.16
Monday . . . 5	56	69	30.15	30.04
Tuesday . . 6	48	68	29.94	29.93

Wind, N.W. on the 31<sup>st</sup> ult. and the 2d, 4th, and 6th instant, otherwise S. and S.W.  
Except the 1<sup>st</sup> inst. generally clear.  
Rain fallen, .385 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE  
LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, SEPTEMBER 16, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*The Plague. Erysipelas. Erythema nodosum. Urticaria. Prurigo. Scabies.*

Of that group of *contagious exanthemata* of which I undertook to give you some general account, two only remain to be noticed; viz. the plague, and erysipelas.

Concerning one of these, the plague—as I have never seen, and hope never to see it; and as, with Cullen, I “think it unfit for a person who has never seen the disease to attempt its particular history”—I shall not presume to offer you any observations in detail. It is a very malignant kind of contagious fever; prevailing, at certain times and places, epidemically; attended with a sort of eruption, namely with buboes and carbuncles; and not furnishing, apparently, any sure or permanent security against its future recurrence. In Dr. Forbes' *Select Medical Bibliography* you will find a long list of works on the plague. I would second Dr. Cullen's recommendation that you should consult those authors only who have themselves had personal experience of the disease. Among the publications that fall within this rule may be mentioned Dr. Russel's *History of the Plague as he saw it in Aleppo*; Sir James M'Grigor's *Medical Sketches*; Sir Arthur Brooke Faulkner's *Account of the Plague which occurred at Malta in 1813*; Desgenettes' *Histoire Médicale de l'Armée d'Orient*; and Assalini's description of the malady as he witnessed it when in attendance upon the French army in Egypt.

I proceed, therefore, to *erysipelas*. And  
772.—xxx.

I wish, in the first place, to fix and define that specific complaint of which *alone* I propose at present to speak. The term *erysipelas* has been employed by medical men in a very loose and vague manner. Any diffused redness and inflammation of the skin is apt to be set down as *erysipelas*; and hence we have disputes as to the distinctions between *erysipelas* and *erythema*. But it would tend, in my humble opinion, to the formation of more settled opinions in respect to *erysipelas*, if the term were restricted to that disease in which the integuments of the *face* and *head* become diffusely inflamed. The phrase *erysipelalous inflammation* may properly enough be applied to other cases, similar to this, in so far as the condition of the *skin* is concerned; but in what I should consider true *erysipelas*, in the medical sense of the word, there are other characters belonging to the disorder quite as important as, and more distinctive than, the cutaneous affection. What is usually spoken of as *erysipelas* of the face and head, and what I would call simply *erysipelas*, falls naturally within that group of exanthematous diseases which includes small-pox, measles, scarlet fever, the plague, and continued fever. It is an idiopathic inflammatory disorder, running a *tolerably regular and definite course*; attended by inflammation of the integuments of the body, or in other words by an *eruption*; often *prevailing epidemically*; and capable of being *communicated*, under circumstances favourable to its propagation, from one person to another. Its power to protect the constitution from its own recurrence is less certain; but the truth is, that so many different affections have been lumped together under a common name, that the proper phenomena of true *erysipelas* have not been made sufficiently an object of separate study to enable us to speak with any confidence on this point. I recollect, however, a certain female who has been three or four times my patient in the hospital with *erysipelas*: and one of the



night nurses there, whom I treated for that complaint some time ago, is now lying ill of the same disorder, under the care of one of my colleagues.

Erysipelas, in the sense now explained, called in Scotland the *rose*, and in this country *St. Anthony's fire*, resembles other disorders of the same group in these points also, that the fever *precedes* the local inflammation, that certain premonitory symptoms frequently go before the outbreak of the disease, and that *sore throat* is an early, and almost a constant, accompaniment of the complaint. The patient feels ill—shivery, feeble, languid, and often drowsy. The actual attack generally sets in with distinct rigors; and the pulse is often very frequent from the first, for many hours, perhaps, before the redness commences. Very commonly there is also manifest disturbance of the alimentary canal, marked by nausea and vomiting, and not unfrequently by diarrhoea. Then some part of the face, usually one side of the *nose*, or one *cheek*, or the rim of one of the *ears*, begins to feel hot, and stiff, and tingling: and upon examining it you find it to be of a deep continuous red colour, and to be swelled and hard. The redness and swelling gradually, and sometimes rapidly, extend themselves: they are defined by a distinct elevated margin, which advances, and invades progressively the neighbouring healthy surface, until the whole of the face, or of the scalp, or of both, is occupied with the inflammation. The lips swell enormously, the eyelids become oedematous, and prominent, and closed, and all traces of the natural countenance are effaced. I know of no disease, except perhaps the confluent small-pox, which so completely and speedily deforms and disguises the visage of the patient. A stranger seeing a young female in the height of the disorder, and revisiting her after her recovery, is astonished at the change. It seems as if, by some magic process, such as we read of in our nursery tales, a hideous monster has been metamorphosed into a comely damsel.

The inflammation frequently spreads from the face and forehead, or ears, to the hairy scalp; and from the head it travels backwards, in some cases, to the neck and the shoulders. Sometimes—and in this it exactly resembles a scald—the inflamed surface becomes covered with irregular bullæ, or blisters; but often there is no vesication. This circumstance, therefore, which has been mentioned by some as furnishing a point of distinction between erythema and erysipelas, fails of that purpose.

In many cases the inflammation is quite superficial: in others it dips through the skin as it were, and affects the subcutaneous cellular tissue; and then, and there, suppuration, and even sloughing of that tissue, are

apt to take place. We find this to be the case often in the loose tissue of the eyelids; and it is more common on the scalp perhaps than on the face.

After the redness has lasted three or four days, it fades, and the swollen surface subsides, and desquamation ensues: and as the inflammation creeps, perhaps, gradually, from one part of the surface to another, you may find the face becoming pale, and covered with patches of dead cuticle, while the scalp, or the upper part of the neck, is becoming red. Sometimes those parts of the inflamed surface on which blisters had formed are covered with *crusts*, rather than with merely dead and dry cuticle. In almost all these cases of erysipelas of the head and face there will be found to be redness and soreness of the *throat* also; although this is not always enquired into, or complained of.

There is considerable variety in the intensity and complication of the symptoms. Sometimes the sufferer lies patiently, yet apparently conscious and rational, till the tumefaction diminishes, and he is again able to open his eyes. Generally there is some wandering of the mind, especially at night; and in bad cases there is much delirium, and at length complete coma, and the patient dies at the end of a few days. In some of these cases the inflammation has extended to the encephalon; in others it is probable that the functions of the brain are disturbed through the febrile derangement of the circulation. When death takes place, and the head is examined, serous fluid is usually discovered beneath the arachnoid, and in the cerebral ventricles; and the veins of the pia mater are turgid. I have stated before that I doubt whether such appearances are always to be attributed to inflammation. Sometimes there are no morbid appearances at all within the skull.

It is said that the erysipelas does, now and then, suddenly desert the surface; and that inflammation of some internal part, and particularly of the brain, is apt to follow such rapid subsidence of the external malady. I presume that this metastasis is rare. I do not recollect to have seen it. But the *extension* of the inflammation, the supervention of delirium and coma, while the external inflammation *continues*, is of common occurrence.

This, then, is one way in which erysipelas is accustomed to prove fatal; by effusion within the head, and *coma*.

And there is another mode in which death is not unfrequently brought about, and which has not been so much attended to; I mean by the affection of the throat. The patients die sometimes almost suddenly; unexpectedly; you cannot account for the unlooked-for dissolution. But if the throat be examined you may (sometimes at least) there discover the

solution of the mystery. The sub-mucous tissue of the glottis and epiglottis is filled with serum, the chink of the larynx has been nearly or completely closed, and the patient has died of *apnœa*. This is just analogous to what takes place externally: the enormous swelling of the eyelids, and lips, and face, is owing, in a great degree, to serous fluid poured out into the sub-cutaneous cellular membrane.

Another way in which erysipelas may kill, is by gradual *asthenia*. Without any stupor or much wandering, without any marked affection of the breath, the pulse becomes weaker and weaker, the surface cold, and the heart at length ceases to pulsate. This mode of dying is less common in this disorder than the other two.

The causes of erysipelas are various, and often obscure. I have stated that it is communicable, by contagion, from person to person: yet this contagious property is so feebly marked, that it is denied by many. It is more active at certain times, at certain seasons, at certain places, than at others; which is the same thing as to say that there are *predisposing* causes of the disease; that there are influences which augment the susceptibility of the body to the agency of the poison.

I believe that on the continent they do not allow erysipelas to be contagious at all: but very satisfactory evidence of the fact has been collected by several of our own practitioners. In the second volume of the *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*, Dr. Wells has brought together several examples in which the complaint appeared to be unequivocally propagated by contagion. "I visited (says he), on the 8th of August, 1796, in Vine Street, Clerkenwell, an elderly man, named Skelton, who had been attacked several days before with *erysipelas of the face*. In about a week afterwards he died. On the 19th of the following month, I saw a Mrs. Dyke, of about 70 years of age, the landlady of the house in which Skelton had been a lodger, and found her labouring under an erysipelas of her face. I inquired whether any other person in her house had been ill of the same disease since the death of Skelton, and was told that his wife had been seized with it a few days after his decease, and had died in about a week. During my attendance upon Mrs. Dyke, an old woman, her nurse, was attacked with the same disorder, and was sent to her parish workhouse, where she died. Mrs. Dyke has since informed me that a young man, the nephew of Skelton, was taken with the disease of which his uncle had died, shortly after visiting him, and survived the attack only a few days. That she herself had been several times with Skelton and his wife during their sickness, and after their death

had removed some furniture from the room they had occupied to her own apartment." Dr. Wells relates other histories of the same kind, all occurring when there was no particular *epidemic* of erysipelas prevailing to account for them. Professor Arnott has given some other examples, still more striking, of the propagation of erysipelas from one person to another, not only under the same roof, and in the same locality, but also when the parties lived at a distance from each other, and the intercourse between them had been casual and temporary. These cases are stated, I think, in the 57th volume of the *London Medical and Physical Journal*. The following incident has been told me upon good authority. A man living somewhere in Westminster fell ill of idiopathic erysipelas. In that state, for some reason or other, he was removed thence; and his brother, who was a servant in or near Portland Place, received him clandestinely into his master's house, and allowed him (for two nights, I believe) to share his bed. That brother was soon attacked with erysipelas; and in the course of his illness was visited by his master. The master also was attacked; and it is worthy of remark, that in both master and servant the disease showed itself just seven days after they had respectively come near another who was affected with it. Dr. Elliotson gives an account of having suffered the disease in his own person. It came on in him five days after the breath from one of his patients, over whom he was stooping to examine the skin, and who had erysipelas badly, and died of it, had come upon his face. "I turned away (he says) disgusted, and said, *I hope I have not caught it*; but five days afterwards, having forgotten the circumstance, I was seized with it." More than once I have had occasion to remark that successive tenants of the same bed in a hospital have been seized with erysipelas after their admission.

But allowing, as I think we cannot but allow, that contagion is one of the exciting causes of erysipelas, there are others which *more frequently* excite it. At least there are many instances of the disorder in which we can trace no exposure to contagion, and in which we can perceive some other probable reason for its occurrence. Sometimes, no doubt, it comes on without any obvious cause. The application of cold often gives rise to it. Irregularity of diet is said to do the same. Violent mental emotions are also accused of being occasionally its cause: it is said to have been brought on both by anger, which is an exciting, and by fear, which is a depressing, passion. Many cases, not to be distinguished in their appearances and effects from idiopathic erysipelas, result from local injury. I have already told you

that there is no inconsistency or absurdity in supposing that a disorder which originates in some common cause may be capable of spreading in the way of contagion. And the testimony of Mr. Lawrence (who is not prone to admit of contagion on light grounds) goes to the effect that such is the case with the disease in question. He mentions an instance in which erysipelas of the head and face, which commenced after the insertion of a seton in the neck, appeared to him to have affected two individuals by contagion.

I say that erysipelas further resembles the disorders of the group in which I have placed it, that it sometimes prevails *epidemically*: and on those occasions, like the rest of the group, its occurrence is promoted by all circumstances that tend to debilitate the body; by intemperance; by previous disease; by low spirits and anxiety; by insufficient nourishment; and by foul air. It used to be much more common formerly in hospitals than it is at present; when less attention was paid to cleanliness and ventilation.

Erysipelas is another of the diseases concerning the *treatment* of which there has been, and there is, a most embarrassing difference of opinion. Some, prescribing according to a *name*, tell you that it is inflammation, and therefore that the remedies of inflammation, and especially blood-letting, are to be vigorously employed. Others declare that the safety of the patient lies in the early and liberal administration of wine and bark. You will not think me a trimmer, I hope, or one who is content with indecisive practice, when I state that neither of these plans, in my judgment, are universally either proper or safe, yet that each of them is the best, under certain circumstances.

I think, the more you see of this disease, the more convinced you will be that it is not to be *cut short* by any particular mode of treatment; that it *will* run a certain course; and that it will *generally* terminate, sooner or later, by resolution, whether remedies be employed or not. It does not follow from this that remedies are of no use: but it does follow that we are to exhibit them, not with the view of *curing* the disorder, but with the view of *conducting* it safely to its termination.

If you look at the history of erysipelas, and of the notions which have *prevailed* respecting it, you will find that the opinions in favour of giving support, and of abstaining, as much as possible, from the abstraction of blood, greatly preponderate. In the outset of the complaint, if the pulse be *hard* as well as frequent, and there be much headache, and active delirium, you must take blood either from the arm, or from the neck

by cupping, or by leeches from behind the ears. But (I speak of the disease as it occurs in *London*) the time for this kind of practice soon passes by: and when you do bleed from the arm, you must (in this town) bleed with caution, and in the upright posture; that the desired effect may be produced by the abstraction of the smallest quantity of blood.

In all cases it will be right to purge the patient briskly at the commencement. A full dose of neutral salts, or of rhubarb and magnesia, will answer better, I think, in these cases, than calomel and senna. If you see the patient very early, and if there be any nausea or oppression of the stomach, it will be proper to administer an emetic.

In most instances you will soon perceive evidence of great debility: a *feeble* as well as a *frequent* pulse; tremors; a dry and brown tongue often. And these symptoms increase, if you *then* persist in drawing blood. The carbonate of ammonia does great good sometimes in such a condition: and this I am very much in the habit of giving. The bad cases of erysipelas are apt to baffle us all. I am not aware that I lose more of them than my neighbours. Speaking generally, a large majority of my patients get well; but I do not bleed one patient in a hundred from the arm.

I am bound, however, to set before you the kind of evidence which exists in favour of the bark; or rather of the sulphate of quina, which is what I mean when I speak of the bark.

Dr. Fordyce, Dr. Wells, Dr. Heberden—all men of great sagacity and experience—recommend the treatment by bark. Dr. Jackson, an American physician, advocates, I see, the same plan. He says, that after a purge, and, if necessary, an emetic, the sulphate of quina should be given in as large doses as the patient will bear; and that from 12 to 25 grains in the 24 hours will generally suffice; and that we may know when the dose is sufficient by a buzzing which comes on in the ears. Dr. Elliotson, also—whom I here quote the more willingly because I think he is rather of an antiphlogistic turn than otherwise, in general—says, that he has never seen quina do harm, even in active tonic erysipelas; and that in doubtful cases, when you hesitate whether to bleed and put the antiphlogistic plan in force, or to stimulate and support, the quina is *always* a safe and *eligible* medicine. Dr. Williams, of St. Thomas's Hospital, thinks better still of *wine*, which he gives in *all* cases *from the very beginning*.

I have hitherto limited my observations to erysipelas of the face and head as it occurs in *London*: and I have done so because I really believe that in the purer air of the country, and in young, strong, vigorous

country persons, bleeding may be proper and requisite. You will find country practitioners pretty well agreed on this point.

But taking the disease as I see it here, I should say that *many* cases do well with but little care or interference from medicine; that *many* also, but a fewer number than the former, prove fatal under whatever plan of treatment may be adopted; and that many patients are to be saved, by judicious management, who would otherwise die.

The first requisite for rescuing these perilous, yet recoverable, cases, is that they should be perpetually watched and tended. The indications of treatment may alter from one hour to another, and it is only by great vigilance on the part of the medical attendant, and on the part of an intelligent and obedient nurse, that medicine obtains its full chance of bringing the patient through.

After clearing out the alimentary canal, then, I would not be active in either way, unless I saw some plain indication for activity. If the pulse became weaker, and I did not feel sure about the propriety of stimulating, I would give five or six grains of the carbonate of ammonia every four hours, and beef-tea. If the disease went on smoothly under that treatment, well and good. If the powers still continued to sink, I should have recourse to wine, or to both bark and wine; but of the two, I am more friendly to wine; and the patients like it better, you may be more sure of their taking it. If, on the other hand, there was much headache, and the pulse was hard, and the febrile distress great, I should apply a few leeches, and prescribe the tartarized antimony in a saline draught. The bowels should not be suffered to become confined: but the mild aperients are better than the drastic in these cases.

Various external medicaments have been used and recommended for the inflamed part. Putting leeches upon it; puncturing it with needles, or lancets; covering, or surrounding it with a blister, or by the lunar caustic in substance or in strong solution; dusting the surface over with magnesia, or flour; smearing it with various unguents, and particularly with mercurial ointment; keeping it wet with some cold lotion; or fomenting it with hot flannels.

Now of all these local appliances, that which, according to my own observation, is the most useful, and which affords the greatest comfort to the patient, is the last that I mentioned, fomentation by flannels wrung out of a hot decoction of poppy-heads. But in order to give *this*, also, fair play, it should be *continual*: not used for half an hour, and then intermitted; but it should be one person's business to apply the fomentation assiduously as long as it is soothing and grateful to the patient. In a few cases, and *but* a few, the warm applica-

tions have been disliked, and cold lotions preferred: and when such is the case, there is no risk incurred by using them, so far as I know; no hazard, I mean, such as you may read of, of the inflammation being repelled from the surface, and driven in upon some vital organ. The local treatment most in favour with our apothecary at the hospital is that of covering the inflamed face and head with flour, by means of a dredging box. The patients declare that the flour cools, soothes, and comforts them. Now this is a more convenient, and, in some respects, a more eligible, application than that of hot flannels. It is less likely to fail of its purpose through the negligence of the nurse.

So much for erysipelas, as it usually comes under the notice and the management of the physician. You are aware that an affection of the skin very similar to that which I have been describing, and called also by the same name of erysipelas, is very common in other parts of the body; on the extremities especially, and occasionally on the trunk: and it will travel sometimes from an extremity till it reaches the head. These varieties of cutaneous inflammation are, in most instances, the indirect consequences of some local injury; of punctured wounds; of the stings of insects, or the bites of venomous reptiles; of mere scratches sometimes. Or the cutaneous inflammation will spread from old sores; or supervene upon dropsical limbs. It is curious that these complaints also are much more apt to occur, and even to spread by a sort of contagion, or in virtue of some epidemic atmospheric influence—at certain times and places than at others. You will find there are periods when the surgeons of hospitals dread to perform any operation, lest it should be followed by this spreading inflammation of the skin. There are many points of great interest connected with these diversified forms of what is called erysipelas: they are more liable to be attended with gangrene than erysipelas of the face and scalp: on the other hand, they are more liable also to be complicated with inflammation of the subcutaneous cellular tissue, and with suppuration; and to require incisions to relieve the great tension of the inflamed parts, and to facilitate the escape of the pus, or of sloughy dead portions of cellular tissue: but all these matters belong rather to surgery, and have been discussed, I make no doubt, by the professor of surgery.

Very closely connected with erysipelas, and continually confounded with it, is *erythema*. It also consists in superficial redness of some portion of the skin; but it is not attended with inflammation of the cellular texture under the skin; nor with vesication; nor, in general, with fever; nor is it peculiar to the face and head.

There are numerous varieties of erythema



described by writers on cutaneous disorders, to whom I must refer you for an account of them. Willan and Bateman; Rayer; Alibert; and Bielt, as his practice and lessons are reported by two of his pupils.

The only variety on which I am disposed to say a word, is one which is attended with more or less febrile disturbance. I mean what is called the *erythema nodosum*.

This curious affection occurs much more often in young women than in any other persons; sometimes in feeble boys. The eruption is commonly preceded for a few days by indisposition, and some slight degree of fever. Then red elevated spots come out, on the fore part of the legs, and occasionally, but very rarely, on the arms. The redness appears in oval patches, of which the long diameter is parallel to the axis of the limb. They are pretty large patches, an inch and a half long, and an inch broad, perhaps; and they evidently project, and form bumps, upon the anterior surface of the leg. From their look, you would suppose abscesses were about to form; but after lasting a few days, the red colour fades, or rather changes to a blue, and the protuberances gradually subside. This eruption seems sometimes connected with disturbance of the menstrual functions. Rayer has seen it occur in connexion with acute rheumatism. So have I. A patient of mine in the hospital was attacked with acute rheumatism of the joints immediately upon the cessation of *erythema nodosum*. In another this order was reversed.

Now I am persuaded that, after an aperient, *rest*, *the horizontal posture*, and *quina*, constitute the proper treatment of this affection. I had once a housemaid, in whom the disorder appeared, and was attended with unusually high fever, and much indisposition. I treated her, therefore, antiphlogistically; *i. e.* I kept her on low diet, and gave purgatives: but the disease went on. Fresh knots came out as the old ones faded. At length, I do not remember why, I prescribed some quina for her; and the improvement was immediate, and very striking. She relapsed, however, once or twice, upon leaving off the bark; but by persisting subsequently in its use for some days after she appeared to be well, a permanent cure was effected. Since that time—now ten years ago at least—I have seen a good many examples of *erythema nodosum*, and I have treated them all alike; *viz.* first with an aperient, and then with the sulphate of quina: and they have all rapidly got well. Probably they would have recovered nearly as soon under some other tonic treatment: but I have been so well satisfied with this, since I began it, that I have felt no temptation to try any other.

There is a rash which is well known, and

very tormenting, and, therefore, not without interest, although it is almost always without danger: I mean *urticaria*. It is arranged by Cullen among the exanthemata; but it does not properly belong to the group to which I would restrict that name, for it is not contagious, and it may happen to the same person a hundred times over. The eruption consists of what, from analogy, are called wheals; *i. e.* of little solid eminences, of irregular outline, but generally roundish or oblong, and either white, or red, or (which is most common) both red and white; the whiteness occupying steadily the central and most projecting part of the spot, or becoming manifest there when the integuments are put upon the stretch. The rash is accompanied with intense heat, a burning and tingling in the affected spots, and great itching and irritation. In truth, both the appearances upon the skin, and the sensations that attend them, are very much like the appearances and feelings produced by the stinging of nettles. Hence its trivial name, *nettle-rash*; which is, indeed, the same, in meaning, with the scientific appellation, *urtica* being the Latin for a nettle. Similar appearances follow almost immediately upon a smart blow with a cane, or with the lash of a whip, upon the skin. Red stripes or *wheals* arise, and within the reddened surface one or more elevated spots of a white colour are visible.

There are two varieties of *urticaria*: one in which the complaint runs a short course, and soon subsides, and may be considered acute; another in which it is chronic, and either persistent or intermittent. The acute form is attended with feverishness, which sometimes begins two or three days, but commonly not more than a few hours, before the eruption appears: or the fever and the rash may commence together. In most cases, perhaps in all, the disorder is intimately linked with some derangement, manifest or latent, of the digestive organs, and may often be traced to the use of particular articles of food. It is very curious that the contact of certain substances with the mucous membrane of the alimentary canal should affect the external tegument precisely in the same manner as the virus of the nettle, and some other irritants, when these are applied to the skin itself. The offending articles of food do not produce the cutaneous affection in all persons, nor even necessarily in the same person at all times. But there are some edible substances which are much more likely than others to be followed by *nettle-rash*. Certain vegetable matters are very apt to excite the disorder in some persons: oatmeal; almonds, especially the bitter almonds; any bitter kernels; particular species of strawberries; raw cucumbers; mushrooms. Some of the vegetable substances used in medicine are known



to have, frequently, the same effect: capivi, for example; the cubebs pepper; valerian. Urticaria has been brought on by drinking porter, or, most probably, by some of the drugs with which our porter is sophisticated. These effects are not confined to vegetable substances. Shell-fish is a common source of nettle-rash. I have known it to be occasioned by prawns; crabs sometimes have the same unpleasant consequence; and still more, mussels. An hour or two after some one of these substances has been swallowed, and, perhaps, much sooner, nausea is felt, and oppression about the epigastrium; the patient becomes giddy, his face and head sometimes swell, his skin begins here and there to burn and tingle, and presently the eruption, as I have already described it, breaks forth. It is attended with intolerable itching and pricking sensations, especially at night, when the patient is warm in bed, or when the affected surface is exposed to the air. Vomiting and diarrhoea often supervene, and prove the natural cure of the attack.

We read that this disorder has sometimes proved fatal; but this must be under very unusual circumstances of weakness in the patient, or of some peculiar virulence in the exciting cause.

The chronic form of the complaint is apt to be very obstinate and teasing. It comes and goes, and comes again. The evening is one of its favourite periods. In those who are subject to it, the itching and the wheals are readily brought on by scratching or rubbing the surface. This is the *urticaria evenida* of Willan. Dr. Heberden had known persons afflicted in this way for ten years together. I have observed nettle-rash to occur in connexion with sudden and violent paroxysms of dyspnoea, resembling asthma fits; so that I could not help suspecting that the mucous membrane of the respiratory passages was irritated after the same fashion with the external skin.

Even the chronic variety of urticaria is, in some instances at least, produced by certain *ingesta*: and the peccant substance may often be detected, and the tiresome malady be cured, by following the simple and judicious plan recommended by Willan; namely, that of instructing the patient to abstain, for a while, from all his customary articles of diet, one by one, in their turn. This experiment does not, indeed, always answer. The urticaria will sometimes abide, notwithstanding: so that although it probably depends in all cases upon some disordered condition of the stomach or bowels, we cannot say that such disorder is *always* the consequence of something that has been swallowed.

The treatment to be adopted in the acute or febrile nettle-rash, when it depends upon

something recently received into the stomach, is that which common sense would suggest, and which nature often plainly indicates. We seek to expel the offending material by an emetic, and by purgatives: and this being done, the cure is completed. In the more chronic and recurring varieties, we endeavour, in the first place, by making the experiment recommended by Dr. Willan, to detect, that we may thenceforth interdict, any article of diet which may have caused the disorder. If we fail in this attempt, our object must be to correct that faulty state of the digestive organs, or to neutralize that inbred poison, upon which the cutaneous affection depends. Laxatives and antacids are found to be the most successful means of attaining these ends. They may be given together, or separately. Rhubarb and magnesia; the carbonate and sulphate of magnesia; castor oil. The snake-root has obtained some repute as a remedy for urticaria. You may prescribe, therefore, if you please, a scruple each of the carbonates of magnesia and of soda, in the infusion of serpentaria.

External applications seem to be of but little avail in this disease; and those which do appear to be of service, act uncertainly, and produce different effects in different persons. The warm bath sometimes gives relief in the severer cases. In the more chronic form of the disorder, spirituous washes, vinegar, sea-bathing, are things to be tried. And cases are related in which, when every other expedient has failed to give permanent relief, removal to a warmer climate has been successful. Dusting the itching surface with flour has, in my experience, afforded much temporary comfort. Still more effectual perhaps is a lotion (first recommended by Wilkinson, in a little work on skin diseases) composed of a drachm of the carbonate of ammonia, a drachm of the acetate of lead, and eight ounces of rose water.

I should add, that Dr. Elliotson has found *bleeding* very efficacious in relieving patients affected with acute or febrile urticaria. And you may have recourse to the lancet if the patient be strong and plethoric, and his pulse warrants it, and if he be so impatient of the irritation as not to be willing to wait the effect of other treatment, which would probably be quite as effectual, though not quite so rapid.

*Prurigo*—itching—is a cutaneous affection bearing some analogy to urticaria, at least in the sensations which accompany it. And a most terrible and melancholy affection it often proves to be. Sometimes the parts of the skin which are the seat of the itching do not present any perceptible deviation from the condition of health; but in the majority of instances you will find, upon close inspection, that they are covered with papulae,

which are nearly of the same colour with the skin itself. Willan describes several varieties of this troublesome complaint: *prurigo mitis*; *prurigo formicans*; *prurigo senilis*. The torment experienced by patients suffering under the severer forms of the malady is scarcely describable: they scratch and tear themselves incessantly till the blood flows, their sleep is broken, and their lives are rendered perfectly miserable. Sometimes this itching is diffused irregularly here and there over the surface; sometimes it affects the extremities only; and frequently it has a still more limited habitat, occurring round the anus, when it is called *prurigo podicis*; or on the scrotum, *prurigo scroti*; or, worst form of all, the *prurigo pudendi muliebris*.

All these forms of *prurigo* are apt to be aggravated by heat, and by exposure to the air; they are, therefore, especially distressing when the patient undresses and goes to bed. The scratching tears away the summits of the papule, and some watery fluid mixed with blood escapes, and concretes into small, thin, black scabs. In the *prurigo formicans* the itching is combined with other painful and disagreeable sensations, which different patients describe in different terms: the feeling is like the creeping of ants, or the stinging of insects, or as if hot needles were thrust into the skin. The *prurigo senilis*, occurring as that name implies in old persons, is usually very obstinate, and often effectually destroys all comfort for the rest of the patient's life.

In such cases as I have now been mentioning, great care should be taken thoroughly to cleanse the surface of the body: and the diet should be rigidly plain. All kinds of rich sauces, hot condiments, pickles, and indigestible substances, should be peremptorily forbidden. Various local applications have been praised; but they are, in most cases, used in vain: lime water, decoction of *dulcamara*, lotions composed of prussic acid in an emulsion of bitter almonds, a dilute solution of creasote, decoction of *stavesacre*, and of *digitalis*, ointments containing mercury, tar ointment, and a hundred others. In one instance lately, where the ingenuity of another practitioner had been fruitlessly exhausted, I was fortunate enough to effect perfect relief by smearing the itching surface with an ointment containing a small quantity of aconitine. Of internal remedies, *sarsaparilla*, alkalies, arsenic, the iodide of potassium, *dulcamara*, are the most hopeful. When these means fail, opium is our best, and indeed our only resource.

The local forms of *prurigo* are frequently connected with local disease, and are most likely to be relieved by measures directed against the primary disorder. *Prurigo podicis* is sometimes dependent on the pre-

sence of ascarides in the rectum. The same troublesome affection is not an uncommon symptom of internal piles: and it sometimes accompanies stone in the bladder.

The *prurigo pudendi muliebris*—itching of the genitals in females—is sometimes so constant and tormenting, and the impulse to scratch the itching part so urgent, as to drive the unhappy patient from society. It even gives rise in some severe cases to nymphomania. It may proceed from leucorrhoea: it is frequently a sign of uterine disease. It most commonly affects women in whom the menstrual discharge has ceased to appear. I have never had an opportunity of trying the aconitine in such cases. The local application which has been found most serviceable is the *yellow wash*, which, as you probably know, is a solution of corrosive sublimate in lime water, in the proportion of a drachm to a pint.

You will sometimes be consulted—at least I have been; on more than one occasion—about itching of the pubes and scrotum, produced by the presence of the pediculi that are vulgarly called crab-lice. The patients are sometimes quite unaware of the cause of the itching. You may relieve them by the wash I have just mentioned; or, by a more elegant lotion, made by dissolving corrosive sublimate in a little spirit, and adding rose water. A single washing with such a lotion will destroy the whole colony: and the vermin become much more visible after this violent death, turning black, and relaxing their hold upon the skin.

*Prurigo* is a convenient generic name for these cutaneous affections, of which the prominent feature is the teasing sensation that accompanies them. But, besides all these, there is a specific disorder, which, from the intensity of that sensation, is emphatically termed *the itch*, and which deserves a short notice; for it is exceedingly common, and exceedingly distressing, and (what is more interesting still) it is easy of cure. It is one of the very few complaints for which we possess a specific or infallible remedy.

Scabies, or the itch, is, as every body knows, contagious; but it is contagious only in that particular sense which implies contact. It is not producible by any effluvia which the atmosphere can convey: it requires, for its propagation, that the healthy person should touch the diseased person, or some substance which has been in contact with his unhealthy skin. Certain parts of the skin are more liable to it than others. It is most common at the roots of the fingers and thumbs, between them as it were; on the wrists; between the toes; in the flexures of the joints. It may spread to almost every part of the trunk or of the extremities; but all observers agree in stating that it is seldom

or never seen upon the face and head; a curious, but unaccountable exemption.

The eruption is at first papular, and then vesicular, presenting a number of pointed watery heads. When the inflammation is aggravated by intemperate habits, or by the scratching from which the patient is unable to refrain, the vesicles are liable to be converted into pustules: and this has needlessly been made a separate *species* of itch, *scabies purulenta*, pocky itch: you see large pustules, filled with a yellow viscid matter, standing on an inflamed base. If you are not aware of these varieties and changes, you may make unlucky errors of diagnosis: affront your patient by telling him he has the itch when he has it not; or suffer him unconsciously to betray himself by communicating it to others when he has. You will easily understand how it has come to be considered a disgrace to have the itch; for it is fostered and propagated in most unfashionable places, amidst poverty, vulgarity, and filth. Yet the most delicate and high-bred lady may contract the distemper; and when once it is contracted, it will go on indefinitely, through life, unless proper means are adopted for its cure. It never gets well if left to itself.

One very curious point in this discreditable malady, is its connexion with a peculiar insect, called accordingly the *acarus scabiei*. The existence of this ectozoon had long been affirmed and denied; but the vexed question has of late years been set at rest by the demonstration of the *acarus*, by a M. Renucci, to a number of medical practitioners in Paris. It has since been detected and exhibited here. One reason, probably, why it has often been searched for in vain is, that the *acari* are not equally numerous with the vesicles: there is not an insect for every vesicle. Another reason is, that persons have not known exactly where to look for the insect. It is not in the pustules or vesicles; but near them; at the extremity of a short, small, superficial tunnel or furrow which runs from them. A third reason why the insect had so long and so often escaped detection, is to be found in its minuteness. It is barely visible by the naked eye; but under the microscope it is seen to be a most formidable monster, with eight legs. I shew you here its portrait; not in little, but enormously magnified. I hope to procure for you the privilege of seeing the creature itself. The first that I can catch I will ask Professor Jones to shew you by means of his microscope.

There is good reason for believing that this parasitic animal is, not merely a casual companion, but the veritable cause, of scabies. Various attempts have been made, and made in vain, to produce the disease by inoculation of the fluid from the vesicles. On the other

hand, transportation of the *acarus* has always excited the eruption.

These facts explain how it is that the itch, though readily communicable by direct contact, or by fomites, is not communicable through the medium of the air; that fomites long retain the contagious property; and that the disease is curable by whatever destroys the *acari*. I believe that the complaint called *the mange*, in dogs, camels, and sheep, has the same, or a similar origin.

Now *sulphur* is as sure to cure the itch as quina is to stop an ague. I presume that it kills the *acarus*; but whatever may be its *modus operandi*, I have never known it fail to remove true scabies. It is applied externally; and the only objection to its use is its disagreeable smell, and the dirtiness that belongs to ointments: but these inconveniences are far outweighed by its certain efficacy. Although many substitutes for this substance have been recommended, I pretermit them all, and advise you to employ the sulphur ointment, of which you may disguise the smell by the addition of a little bergamot, and the colour by intermixing a small quantity of vermilion.

The ointment should be carefully rubbed all over the skin, at bed-time, and most especially on parts visibly affected with the eruption. The patient should sleep enveloped in a flannel dress. The rubbing should be repeated night and morning, and in two or three days the complaint will be subdued. Then thorough ablution with soap and warm water, and the destruction of the contaminated clothes by fire, will complete the purifying process.

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## CLINICAL OBSERVATIONS ON DISEASES OF THE SKIN.

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### SCALP DISEASES—continued.

*Favus*.—Favus presents, in its configuration, in the ulterior aspect of the scabs, two varieties, which, although they do not differ with regard to treatment, are entitled to be considered separately—favus vulgaris, and favus scutiforme. The first is that which Willan called porrigo lupinosa; Alibert, favus vulgaris; and Bielt, porrigo favosa; the last is the porrigo scutulata of Willan. When favus vulgaris first appears, it is in the form of a red patch, already described, with its broken and easily detached hair; it presents a small, yellow, round point, with a depressed centre, scarcely raised above the surface. This little yellow point,

very visible, very defined in its form from the fourth to the sixth day, is frequently traversed by a hair; it is almost constantly preceded by itching, by heat and redness. Gradually it becomes raised more and more above the skin; the same rounded form, the same central depression, continue, and the honey-comb appearance is soon presented. New and similar crusts may be developed, side by side, and irregularly circumscribed patches may result. If the crusts are old, they become whitish, dry, brittle, and partially detached, but the central depressions are still observable. When the crusts are separated, the interval is often reddish and scurfy. Irritation, inflammation, and considerable itching, are the accompaniments. If the parts be not kept clean, pediculi are developed in great numbers; generally the hair is loosened, and easily detached: its nutrition seems to be diseased. If the hairs be allowed to come away themselves, and are afterwards reproduced, the colour is different, and they have a woolly appearance. Sometimes there is no reproduction, the bulbs are injured or destroyed, the skin continues pale, smooth, and shining, or shrivelled and parchment like. It is thus in the progress of the disease that one or more incurably bald places may result; the irritation gains in depth, and the skin may be inflamed in its entire thickness. The great itching, caused more particularly by the pediculi, occasions a constant and violent scratching; excoriations, preceded, or not, by accidental pustules, may be the result. Upon these excoriations, frequent scabs may form, but they are different from those of favus. Small abscesses sometimes form under the pericranium, and even the bones of the skull may suffer. The odour, so like the urine of a cat, which is so characteristic of favus, is then changed into a fetid odour, which is increased by any means we employ for softening the scab, and the irritation of the neighbouring glands becomes troublesome. In fact, if the disease be neglected in a broken patient, the mind may be enfeebled, and the bodily health ultimately give way. These cases, however, are rare; the disease must be spontaneously developed in a deteriorated constitution for that to happen. It may remain almost stationary for years. When it is spontaneous, when it expresses, like eczema, or impetigo *larvalis*, a necessity for some fluxionary discharge, it will sometimes rapidly yield when that want ceases; but this is an unfrequent result. In all cases where nature has effected a cure, the skin, in the parts which have been long affected, remains, after the scabs come away, red and shining. In some instances the hair is imperfectly reproduced, in most cases not at all. If the

disease has not lasted long, the hair bulb may not be much injured, and the hair may be reproduced naturally. Where the cure is the result of treatment, if the hair be reproduced at all it is often imperfectly done; varying with the stage of the disease when the case was submitted to treatment, the ravages which it had made, and the means of cure employed.

Many persons incline to the belief that, after contagion, hereditary causes are most fertile in producing this affection. No one seems to doubt the energy of the first named cause, though many men, after much experience, have modified their opinion on the point. Alibert, who was early in life a very decided contagionist, so far modified his opinion near the end of his career as to admit contagion only under very particular circumstances. Emery has resorted to experiments on this subject, from which I should shrink: he has covered the heads of children, young persons, and adults, with the caps of favous patients; he has applied portions of scabs on healthy and ulcerated surfaces, and on recent wounds, without even developing favus. In this establishment I have never known a case of favus to extend from one child to another. All this is, however, no proof that the disease is not contagious; but it may be admitted as evidence that the commonly entertained ideas on the subject are exaggerated. Still, I think the contagious nature of the affection cannot be denied; the evidence of its extension by contact, and in schools, from the use of the same brushes and combs, is conclusive. However, I believe it is placed within narrower limits than some people think. I apprehend that certain favourable conditions as to age, temperament, and vitality of integument, are necessary to insure communication: simple contact is not always enough. If, therefore, prudence dictates a certain reserve in communications between suffering and healthy children, reason and experience would equally repulse exaggerated apprehensions, unfounded alarm, and ridiculous and minute precautions.

It is said, but I think the proof not very ample, that favous children come generally from favous parents; but here my information is inconclusive. So far as it goes, it makes against that idea as a general principle. The most efficient cause by far is that state of system which is brought about by misery and want. Although favus may be developed in the first months, or the last years of life (we had an out-patient whose head was covered with favous scabs, when between 60 and 70—she lived in Ogle Street); yet, unless communicated by contact, it is more frequently seen before than after puberty. Emery says, that more than five hundred



cases of porrigo favosa have passed through his hands, and that he has never seen a case where the disease was spontaneously developed after 18 or 19.

The second variety of *favus* is that which the French authors, after Alibert, called *teigne nummulaire*, or *annulaire*, or *favus squarrosus*, or *favus scutiforme*. Willan, porrigo *scutulata*; others, ringworm; and which we know as *favus scutiforme*. This form very rarely affects any other part than the scalp. At first, it presents elementary points, rounded and yellowish, depressed in their centre, absolutely similar to the preceding variety, the elementary characteristic of the favus being the same in both; but in this variety the cup-shape depression soon disappears, and the crusts are ranged circularly, sometimes more projecting at the circumference than the centre. They are very dry, of a yellowish-white colour, and form, by coalescing, rounded incrustations, which are sometimes much raised above the level of the skin. In other respects this variety presents almost the same circumstances as the preceding, in as far as concerns redness, irritation, and itching; the aspect of the part when the scabs fall off; the influence which it exercises on the hair bulb, on the falling off of the hair; the desquamation of the skin in the intervals of the patches; the tendency to extend to neighbouring parts. But although a general and continuous crust may cover the head in this variety, as in the other, forming a species of skull cap, yet in the first variety, the *favus vulgaris*, we always perceive here and there some cupped depressions; whilst in the second variety, our *favus scutiforme*, there is a continuous scab, of a greyish yellow colour, neatly circumscribed by one or a series of circular lines. This variety is oftenest found towards the back of the head, forming one or more rounded patches. Its tendency is to persevere indefinitely, like the preceding variety; but it does not generally present the same gravity, nor the same disposition to affect the deeper parts. It may, like the last, occur spontaneously, as an hereditary disease, or may be contracted by contagion. The greater number of cases I have seen have been single, without any evidence of contagion. Baumes has usually seen it as the result of contagion; certainly, he says, three times out of four.

The *scutiform* variety is less frequently seen than the other. Usually the disease appears before puberty, sometimes after, but when it is seen after puberty the history of the case usually shows that it had been developed before, had been ill cured, or had occurred again and again, shewing an irresistible tendency in the constitution to develop the affection, or it has been produced by contact.

The diagnosis need hardly be dwelt upon, in as far as concerns the first variety, the *F. vulgaris*. What has been already said is sufficient to prevent it from being confounded with any other kind of eruption, even with *F. scutiforme*. But the latter may, under particular circumstances, be confounded with impetigo *granulata*, when that affection forms rounded and large crusts. Yet in this last variety, as the crusts are of a greyish brown rather than whitish yellow, as in *F. scutiforme*—even if the latter crusts be so dirty as to present somewhat of the appearance of *I. granulata*—if we scrape their surface with a fingernail, or remove a broken portion, we shall discover a yellow powder proceeding from the favous crust. But the most certain distinction is to be had in getting rid of a crust, and observing the process of reformation. We then see in *F. scutiforme* the elementary crust developed, so characteristic of favus; while in *I. granulata* we see the exhalation from the red surface divested of its crust, dry up, and produce a totally different scab. But we may descend a little more to particulars. There exists always on the different parts of the head of persons suffering from favus, dry scabs of different forms, but of which a certain number present a central depression, whilst others are raised granular bodies, of a yellowish white colour, traversed by hairs, agglomerated together, and exhaling an odour like that of mice or cat's urine. Almost always around those crusts we perceive a certain number of small yellow pustules, scarcely raised above the skin, some of them including hairs. In some points the hair falls; in others it is thin and woolly. No other affection of the scalp presents these characters. The porrigo, or impetigo *granulata*, which has sometimes been confounded with it, has also granulations, which are attached to the hair; but they are always brownish or greyish, never hollowed at their centre, nor broken at their circumference; and when they come away, they leave no depressions after them. They never exhale the same disagreeable odour as those of favus. As to the *I. larvalis*—the *achor mucifluens* of Alibert—the existence of yellowish pustules, the yellow humid crusts which cover the head, the pain which accompanies them, the existence of the pustules on the neck and face, the absence of the characteristic odour of favus, are characters so distinct, that it is impossible for a practised eye to make a mistake about them.

Although the prognosis in porrigo is not grave, neither is it favourable; persons have died of neglected porrigo, the disease having affected the bones of the skull. In a great number of cases the duration of the



disease is long, the relapses frequent, and it often resists the most rational treatment. In the most favourable cases a loss of hair commensurate with the extent of the disease is an inevitable consequence. There is, it is true, sometimes a reproduction, but the second crop is often a thin whitish woolly product.

*Treatment.*—Whatever part the hair plays in the production or the continuance of the disease, the feeling in all times has been strong and general that it is necessary to produce a very profound impression upon the scalp, if we hope to cure it. Galen employed depilatorics, which he named *psilothra*; they were composed of corrosive and caustic substances, such as orpiment, quick lime, &c. The middle ages witnessed the use of the *calotte*; at present modifications of both are employed. The object, under each modification, is to remove the hair; upon that the cure has very generally been admitted to depend. If the hair be not removed by art, it will be done by the disease, with this difference as to result—in the one case there may be incurable baldness; in the other the hair will most probably be reproduced. Willan says, “as soon as the extirpation of the hair is completed, the scalp, though partially much denuded, reassumes its natural colour and appearance.” Although the principle of depilation has been so long regarded as that upon which the greatest reliance was to be placed, there can be no question that, in many cases, the cure can be accomplished without resorting to depilatory powder, the *calotte*, or the tweezers, or, indeed, to any modification of them.

There are certainly few diseases for the cure of which a greater number of plans have been proposed than favus—few which have been more entirely left in the hands of ignorant quacks. In Paris there is a family of the name of Mahon, who have long been famous for the cure of scald head. Their plan is secret, but its favourable effects are incontestible; and it is known that they make much use of depilation. Chevallier, some years ago, gave the forms of their depilatory powder. No. 1, 2, and 3, were composed of slaked lime, almost carbonated, subcarbonate of potash, silica, alumina, charcoal, and oxide of iron. Gibert states, that from 1807 to 1813, he saw 439 girls so cured, the average time being fifty-six dressings. This powder is sprinkled frequently over the part from which we desire to remove the hair, which is quickly loosened by it. I entirely agree with Cazenave that they owe much of their success to the care with which they make their applications; but then their cases are not all favus, perhaps not a fourth of them. The journals of St. Louis, however, prove that they are

by no means infallible. The disease requires great care as to cleanliness, and appropriate local means. Many persons think that it is indispensable to recur to general treatment to destroy the cause of the disease; but those men who treat the largest number of cases do not employ any other general means than generous diet, and slightly acid laxative medicines; but where scrofulous contamination is evident, bitters, tonics, iron, and iodides, may be advantageously added. I wish at the moment to put you on your guard against a much-vaunted plan of treating these affections—blisters or issues to the back of the neck and the arms; it is not only a useless plan, but one in which you may find the disease developed around the irritated point.

The treatment used at St. Louis is, first, either to have the hair cut very short, or the head shaved, except at the affected point. Then the head is rubbed over with lard, and powdered with lime. The next day the head is washed over with some mucilaginous fluid; it is then covered with a large cataplasm for two or three days before any curative means are employed. After that, morning and evening, the head is washed with soap and water for eight or ten days. In the interval it is covered with a linen cloth, thickly spread over with the following ointment:—Subcarbonate of potash, four parts; slaked lime and sulphur, of each one part; lard forty parts. After eight days vinegar and water are substituted for the soap and water. In six weeks or two months the most inveterate case will often yield to this treatment, without tearing out the hair at all.

Bielt was accustomed to rely much on an ointment of ioduret of sulphur, which was employed, when the hair was removed, night and morning. At the same time the parts were kept very clean by the use of soap and water, or acidulated water. The proportion of the iodide to the lard should not exceed two parts to thirty-two, and frequently one will be found to be enough. If used too strong, an erysipelatous redness may be developed. Some persons employ an ointment of calomel, or of the proto-iodide of mercury, in the same proportion as the iodide of sulphur. Others have used frictions of mercurial ointment, together with a very weak lotion of the bichloride. A lotion of hydrochloric acid, associated with an ointment of four parts vegetable tar, with twelve parts of lard, has also been successfully used.

In the present day some people follow the old epilatory system of removing the hair by means of the *calotte*. This treatment was founded on the supposed necessity of removing the hair from within the bulbs, which were believed to be the seat of the disease;

but before resorting to such a brutal means of treatment, it would have been well to have sought out the nature of the affection, and to have ascertained whether milder means would not do. It must not either be lost sight of, that it was often necessary to use the *calotte* five or six times. It would have been well to be assured that the avulsion of the hair was really necessary for the cure. Cazenave fairly stated the case with reference to this point: he says, "Is the presence of the hair in these cases so injurious as is supposed: and when the hair is removed, does the disease cease its ravages? Certainly not. The scabs may continue for years on points where there is no hair." But there is no doubt either that depilation is a very certain means of exhausting the disease.

There is a means which may sometimes be advantageously employed; it is this: after cutting the hair to scoop out the favi, and to cover the head for two days with compresses of vinegar, and afterwards to touch each point with a caustic solution of iodine. As to the cauterization of favus for the purpose of destroying the hair bulb, I have often tried it, but without much success. In the girl before you I have again and again cauterized every point with fuming nitric acid, but with no satisfactory result; I have pierced every *favus* through and through with a needle, and then squeezed out the matter, but with no better result. As to the cauterization of favus for the purpose of destroying the hair bulb, it has been frequently employed without success; and in all cases it should be employed on small points. Where the scalp is very spongy, and this is often the case in persons suffering from favus—and in such cases I think the disease is usually more obstinate—I have seen tried, and I have also resorted to it myself, scarifications at the affected part. It is true they give greater solidity to the tissues at the part, but I am not satisfied that they are very available for the cure of the affection. These and other means I have tried, and known to fail; but I am bound to say that, in my opinion, the success of particular methods depends entirely on the care with which they are carried out. In these cases it will not do to delegate to ignorant attendants duties which can only be efficiently performed by yourselves. If you are content to see your patient once a week, and then merely to give general orders, which may or may not be carried into effect, you had better surrender the case into other hands. With great watchfulness many means will succeed; without it the best will fail. This I apprehend will account for the following passage from Baumes. "For more than fourteen years that I have observed and treated *porrigo favosa* at the Guilloterie,

to which a large number of children thus afflicted were brought, and afterwards at the Antiquaille, where there are special wards for their reception, each containing from twenty to thirty beds, I candidly declare that I have never been able to obtain a radical cure of *porrigo favosa* by any other than the epilatory method, although I have tried all the means which have been most vaunted. I have employed successively, and on many patients at a time, ointments containing soda, potash, lime, mineral acids, iron, mercury, arsenic; the powders, or vegetable productions, which have been recommended to me—sulphur, sulphuret of potash, iodine, iodide of sulphur, charcoal, tar, soot, creosote, in fact all powders or preparations, mineral, vegetable, or vegeto-mineral, which have been described as so successful; and that, throughout, I have met with failure, and sometimes danger." Beyond this, having, like many others, regarded favus as a sort of vegetating organic parasite, not being a true vegetable, as was thought by Gruby, I have tried cauterizing the hair bulb as well as the scalp with nitrate of silver, acid nitrate of mercury, concentrated tincture of iodine, and all the caustics which have been recommended. What has happened? Either the destruction of a part of the scalp, with its hair bulbs, followed by a cicatrix and a bald point, or inflammation and suppuration of the scalp, considerable suffering, and return of the disease."

But so long as it is admitted that the removal of the hair is an important prelude to the cure of favus, means for accomplishing this object will be employed—either in the form of tweezers, the *calotte*, or some depilatory powder; and to some such agents I have no objection to make, provided milder means—such, for instance, as that in common use at St. Louis—have been fairly tried. In most cases the task of removing the hair from the diseased surface is an easy one; but as it is prudent to remove the hair to a small distance around, where it adheres with its ordinary tenacity, unless some previous means be taken to loosen it, the task will not be executed without a good deal of pain. On the point itself, when our attention is first called to it, some of the hairs are broken, others so loose that they are easily removed with the tweezers, and some have dropped out already. There is no doubt that, if we object to remove the sound hair with the tweezers, we may make the matter comparatively easy and painless by the use of some such means as those employed by the Mahons. Although I object to the *calotte*, such as was formerly used, by which the head was stripped of its covering, there are modifications of it which may be used with much advantage on and imme-

diately around the diseased point. On this subject I may refer you to the testimony of Baumes, who says that cases often fall under his observation, where the true *calotte*, or some modifications of it, have been used at some of the religious houses in his district, and where the cure has been completed, and the hair reproduced. The modification of the *calotte* employed was this: a mixture of two pounds of vinegar, four ounces of Burgundy pitch, and two ounces of starch, was made in the following way:—In an earthen vessel the pitch and vinegar were melted, the starch was mixed with a little water separately, and when the vinegar and pitch were brought to the boiling point, the starch was stirred in, and kept in motion until the mixture attained the consistency of paste; it is then spread on strips of strong cloth, which are laid on the affected part. Where the crusts are very thick, they are sometimes previously removed with a spatula. On the succeeding day, the cloth, which is strongly adherent, is removed, bringing with it as much of the hair as possible. The bloody surface is then wiped, and covered with new strips, which give a good deal of pain; which, however, does not last long. As usually only part of the strips are removed on the first day, the remainder are removed on the second, and so on until the head is sufficiently depilated. Fifteen of these dressings are sufficient for the cure of ordinary cases; but the rule is, to continue them until the skin is as smooth and as white as the forehead. Baume's *calotte* is differently made; thus, starch 110 parts, Burgundy pitch 224 parts, ordinary pitch 96 parts, turpentine 48 parts, white vinegar 1250 parts. Boil the vinegar and starch, previously mixed, until they attain the consistency of paste; melt together the pitch and the turpentine; mix the two compounds together, boil them, and spread as before. He applies the strips over portions of the scalp, and does not make his dressings oftener than twice a week; and never applies, immediately, fresh ones to the same part; so that one-half of the head, at least, remains uncovered; and this is covered with oiled paper. In this way, he says, he has cured a large number of these cases, the mean duration of treatment being five months; and he requests the parents to continue the oil application for another month, by which the growth of the hair is favoured, and relapses prevented. In these cases there have been no relapses. "As I have taken every precaution to avoid error, I am in a condition to judge definitively of this mode of treatment; and I believe it to be, in all cases, the best mode of treatment that has ever been employed against this most tenacious, most rebellious, of scalp diseases, *favus*."

There is another means of accomplishing

the same object, recommended in the journal of Desault; a solution of gum-ammoniacum in vinegar, 125 parts of the former in powder to 375 parts of the latter, macerated in an earthen vessel at near the boiling point; it is then strained through a coarse strainer, and 250 parts more vinegar is added to the residue, which is treated as before, and both solutions are then mixed; a short time is left for deposit, when it is poured down and gradually evaporated to the consistency of honey. It is then ready to be spread on linen as before. In the journal it is recommended to leave the strips on for two months; Baumes leaves them on only two or three days as before. When it is removed the hair is brought with it. With this plan, two applications a week, for ten weeks, has sufficed to cure many cases; and the pain is as nothing when compared with the old *calotte*, which produced great pain and excoriation of the scalp. If we consider any modification of the *calotte*, with reference to the suffering it occasions, it is certain that, in many cases, severe pain and bleeding accompany the removal of the cloth; if the parts be smeared with oil, the pain is soothed, probably by the exclusion of the air: sometimes the plaster comes off the cloth, instead of bringing away the hair with it; but you will find the ammoniacum will adhere firmly to the hair, and that a single tug at the strip will usually bring away the hair to which it adheres, provided the hair be of a proper length; that is, from a sixth to a fourth of an inch long. One thing is to be borne in mind, that the strip must be taken off in a direction opposite to that of the hair. Still, having laid before you so much of the *calotte*, I am bound to say that, by using a depilatory powder and the tweezers, the object may be attained with more ease. Such are some of the more important plans of treating favus. I say some, because the compass of an ordinary volume would hardly include the whole. I have alluded to those which, with proper watchfulness, will be found efficient; but without it they will as often fail. No matter what plan of treatment is adopted for the cure of the favus, whether it include avulsion of the hair or not, unless it be followed up with great care and perseverance the chances of success are remote. However good in principle, unless the details be carried out thoroughly, it will commonly disappoint the expectations which have been raised by it. Every medical man who undertakes to cure favus should, for his own credit's sake, attentively examine the case every day, or at furthest every second day, or his attendance will most likely end in the transference of his patient into the hands of some irregular practitioner. I am satisfied myself that, if proper watchfulness be exercised, if the hair

around the part be carefully extracted, and means be taken to prevent the extension of the contagious matter to neighbouring parts, that the most obstinate cases of favus may be made to yield. I am not less sanguine that, in milder cases, much may be done even without avulsion, by the adoption of some such line of treatment as I have indicated when speaking of the treatment employed at St. Louis.

*Squamae.*—Of squamous diseases of the scalp the only example I can show you is a case of pityriasis, and that in an adult. In young children the scalp is covered with branny scales, and if we rub them off we find the skin under them more or less red; but in adults the scales are smaller, more easily detached, and the hair as if powdered. I have suffered from it myself; and I assure you it is often a very obstinate affection. I have no doubt it is occasionally confounded with chronic eczema; but this should not happen, for eczema is always accompanied by a certain redness of the skin, as well as a certain exudation, whilst in pityriasis there may be no change in the colour of the skin, and no exudation; besides that, if carefully examined, vesicles are rarely absent around the circumference of a patch of eczema. Still you must be on your guard, because such mistakes have been made by experienced men. The varieties of pityriasis we shall speak of elsewhere; at present we shall only make a few observations as to treatment. All irritating agents should be avoided, whether in the form of a hard brush or hard combing; and in children the head should be washed daily with mild soap; but in adults, where the hair is long, the difficulty of washing daily is complained of. By some persons it is recommended that the hair should be cut close to facilitate washing, as well as the application of sulphureous lotions; but I cannot say that I have known much good from it. I have had as much difficulty in curing pityriasis when the head was nearly bald, as when well covered with hair. In my own case, as well as in that of others, I have cured the disease by the daily use of bear's grease, to which some liquor potassæ was added, say 3ss. to ʒj.

### ON TIC DOULOUREUX.

By R. H. ALLNATT, M.D., A.M., F.S.A.

(For the Medical Gazette.)

[Concluded from p. 917.]

FROM this curtailed and imperfect review, we have seen the sympathetic nerve, in its complex associations, ramifying throughout the whole extent of the body: have demonstrated, from

the direct testimony of undoubted authority, the capacity of the nerve for receiving and transmitting morbid impressions; and it now remains to search for some cause which, when applied to the ganglionic centres, shall be efficient to the production of pain in the expanded extremities of the external vital nerves which are associated with the internal ganglial system, both by direct continuity and identity of function.

It may be well perhaps to state *in limine*, that, in tic douloureux arising from organic disease, the lesion may be situated either at the origin of the nerves affected, at or near their principal trunks, or in the locality of their ultimate ramifications. Sir Henry Hallford states, that intercranial osseous tumors, and exostoses of various other parts, are sometimes sources of the affection. I do not propose to enter upon the consideration of neuralgia arising from these causes (which is comparatively rare), but will confine my remarks to those curable and more frequently recurring forms which spring from the action of mere physical disturbance; which have been denominated idiopathic, and which, for the sake of avoiding ambiguity, and, in conformity with the views here expressed, I will designate constitutional. I desire to be understood, however, regarding the use of this term. By it I merely wish to express that the aberration of function of the external seat depends upon predisposition or idiosyncrasy in the individual affected: the cause itself deriving its origin from constitutional disturbance. Mr. Swan, after enumerating cases, which, to my mind, carry conviction as to their origin, states: "The preceding considerations would lead to the conclusion that the continuance of disorder may produce the most complicated changes in the system; but there is no sufficient reason for inferring from thence that it is generally constitutional. It is desirable to lean as little as possible to such suggestions, which are the mere opinions of despair, and not only tend to increase the sufferings of patients by taking away hope, but to prevent that due attention to pathological researches which may extend the means of relief."

I confess I do not fully apprehend the drift of this argument, as I think it will be found that, by tracing the ma-



lady to a constitutional source, the indications for the guidance of our practice may be followed with comparative facility, and far greater prospects of success.

Pathologists are much divided in opinion regarding the cause of tic douloureux. Mr. Abernethy, Sir Charles Bell, Dr. Johnson, and other writers, have assigned its origin to gastric and intestinal irritation: but this supposition has been disputed by others. Dr. Elliotson makes the broad assertion—*"We have never seen one case referrible to such an origin!"*

Rahn† seems the first to have indicated the truth on this head, in 1771, by collecting several cases to prove the connection of nervous pains in various parts of the body with disorder of the bowels, and the importance of purgatives in their cure.

Andral, when speaking of hyperæmia, says, there are certain morbid conditions to which we can scarcely give another name than that of migratory fluxes, in which in turn, and without ceasing, the different organs are affected with congestion: one day it is in the uterus; another in the liver; another in the lungs; and another in the brain. In a word, there are individuals who seem to be under the necessity of having some hyperæmia; and since, as observed by Ley, local determinations of blood to the surface are found to produce excessive development of nervous energy, as is proved by its influence upon the capillaries, and in increasing heat, it is probable that congestion of the vessels of the neurilema, especially if accompanied with arterial excitement, may occasion similar results throughout the ultimate distribution of the nerve.

It further illustrates this view to observe, that, though tic douloureux manifests itself in all habits and states of the constitution, in the full and plethoric, the spare and delicate, yet in every case there appears a peculiar mobility of the system, or high degree of susceptibility to nervous impressions. It is still indeed an undecided question whether or not one sex be more subject to the disorder than another. André, Baillie, Samuel Fothergill, Sauvages, Thouret, and Barnard, consider it more

frequent in men; Prigol, on the contrary, John Fothergill, and Hutchinson, regard it as more commonly occurring in women. As far as my own observation leads me to a conclusion, I certainly incline to the latter opinion.

"In the cases of tic douloureux," says Mr. Abernethy, "which have fallen under my observation, the digestive organs have been greatly disordered; and I have cured patients of the former malady by correcting the latter." The following case is then given as an illustration:—"A gentleman who had suffered for fifteen years from tic douloureux in his face, became completely relieved in the course of a few weeks by attention to diet, and the regulation of the functions of the digestive organs. He afterwards evinced the degree of his amendment, and exultation at his recovery, by telling me the following story. When I returned home, I one day met, said he, my doctor in the market-place, where I had bought some pears. I gave him half of them, and told him I would lay a wager that I would eat my share first. The doctor was astonished, for he knew that I might as easily (like Mutius Scævola) have put my hand into the fire as a cold pear into my mouth during the last fifteen years."

"There are cases," says Sir B. Brodie, "in which you cannot trace tic douloureux to its source. There is something or other, somewhere or other, in the system, which acts as a source of irritation to the nerves of the face; but what that something is, and where it is, we cannot discover. Indeed, generally speaking, I should say that nothing is more difficult than to trace any local nervous affection to its real source. The disease may be in one part of the body, and the pain or spasm which it produces may be in another. I have known a patient have violent neuralgia of the foot, which depended on a stricture of the urethra; and which, whenever it occurred, was invariably relieved by the use of the bougie. I have known another patient have neuralgia of the foot, depending upon internal piles, which came on whenever the piles protruded, and went away when the piles were reduced."

These cases are not very apt illustrations of the position maintained by Sir Benjamin; for in each of them we perceive a direct cause of the local dis-

\* Dict. of Practical Medicine.

† Rahn, *Mirum. inter Caput*, &c. 1771.



order. And what more satisfactory testimony can we desire, that the ganglial system is the seat of all these affections, than the following, from the work of the same author, "On the Constitutional Origin of Nervous Diseases." "The mucous membrane of the stomach and intestines presents a very extended surface, on which a multitude of nervous filaments are distributed, maintaining an extensive sympathy" (a direct communication) "with the rest of the system. This membrane is subject to various causes of irritation, to which nervous affections, showing themselves even in distant parts of the body, may not unfrequently be traced. Hence it is, that these diseases are, in some instances, relieved or cured by an adherence to a well-regulated diet, by the exhibition of purgatives, of what are called alterative medicines, and of others which tend to improve the disordered secretions of the stomach and liver."

"I believe," says Sir Charles Bell, "that irritation in certain parts of the alimentary canal produces neuralgic pains in more remote parts; and that one character of these pains is their recurrence depending on the process of digestion."

When Sir Astley Cooper lectured before the College of Surgeons, he exhibited the intestines of a dog which had been fed some hours before. The chyle was seen adhering to the surface of the jejunum, and the corresponding mucous coat in a high state of vascularity. This was the excitement of a part during the performance of its natural function, and, but for that consideration, we should have called it inflammation.

My reader will draw the just inference. In the process of assimilation of food, distinct parts of the intestinal canal are brought successively into action. It has also to be recollected that this canal is estimated to be, in length, seven times the height of the body. Is it, then, an extravagant conclusion, that a morbid condition, or irritation, or functional disturbance, may take place in this canal, causing pains of remote parts; and that they shall vary according to the part of the mucous membrane under disturbance?"

After this distinct, and to my mind conclusive, avowal of Sir Charles Bell, I do not hesitate to state my own con-

viction, and that, too, drawn from practical investigations, that the cause of constitutional neuralgia *invariably* exists in some aberration of function of the chylopoietic viscera. Indeed, I have never seen a case in which it could not be traced to this source. In one, we have clay-coloured evacuations; in another, darting pains of the thorax; tenderness in the region of the liver; distension of the stomach, or duodenum, or intestines; a false, depraved, or scanty appetite. In females, the borborygmus, accompanied by the hysteric clonus, or the globus hystericus. I have a *man* now under my care for neuralgia, who is devoured by the genuine mis-called *hysteria*, and who, upon any sudden emotion, mental or physical, is threatened with suffocation by the ascending globus. The time will come when (authors consenting to abandon routine reasoning, and the essential cause and nature of neuralgia are well ascertained) hysteria will be rescued from its present ambiguous position in the category of diseases.

I will transcribe, from my note-book, as they occur, three cases of the most severe description of neuralgia which are now under my observation; each of which has been treated, for many years, as an idiopathic affection, the cause being unknown.

CASE I.—Mrs. Cousins, Shoe Lane, Fleet Street, æt. 36. Tic douloureux of ten years' duration. Trifacial universally affected with excruciating pain; severe hepatalgia; palpitation of the heart; sleep greatly disturbed; describes the pain as *shooting from the region of the liver directly into the face*; bowels habitually torpid, and motions unhealthy. Had taken arsenic and sesquioxide of iron without benefit, and had been dismissed from an hospital in town as incurable. During the progress of treatment by me, she had diarrhoea, during the continuance of which the neuralgic pain subsided.

I treated this woman purely constitutionally; and the first evidence of its beneficial action was, that the pain shifted from the extent of the whole face, and became central in one small spot on the right cheek. She now (August 1st) sleeps comfortably during the night, her general health is daily improving, and the pain gradually subsiding.

CASE II.—John Warren, Chancery

Lane, cabinet-maker, ætat. 43. Infra-orbital and maxillary neuralgia of ten years' duration. Paroxysms occur almost incessantly by day and night. Schneiderian membrane irritated, producing an abundant flow of clear mucus from the nose, which affords temporary relief. Paroxysms of intense severity; bowels rather confined, and motions lighter than natural; digestion good, and no evidence of hepatic derangement further than that evinced by the clayey motions and transient darting pains in the right hypochondrium; general health impaired through the violence of the pain, and from passing sleepless nights. Has tried a variety of remedies without benefit. The sesquioxide of iron, in large and repeated doses, aggravated the pain. Had four or five paroxysms during the time he was in consultation, of fearful violence. Had been obliged to abandon his trade.

The treatment, in this case, was directed to the removal of the supposed cause: and my notes, to July 19th, run thus:—considerably improved; paroxysms less violent; pain confined to one spot; sleeps undisturbedly the whole night.

The next case is more hopeless as to a permanent beneficial result, the brain having probably become involved, giving rise to a slight paralytic affection.

CASE III. — William Aver, tailor, Adelphi. Tic douloureux for sixteen years; paroxysms, of excessive severity, almost incessant. Articulation indistinct, owing to rigidity of lower jaw; face distorted; respiration impeded, from spasmodic action of the muscles of the throat and neck. Upper half of the body drawn together, and distorted; pain darts like an electric shock from the right hypochondrium along the neck to the face; darting and lancinating pains in chest after eating; friction of the razor in shaving produces violent paroxysms; teeth drawn without benefit. Had taken morphia, and other preparations of opium, without relief; bowels habitually torpid, and evacuations clay-coloured. This patient, with the others above enumerated, is still under treatment, but with less promising expectations.

These cases are adduced as a negation to the assertion that no cause can

be detected to lead to a supposition of the origin of neuralgia, and because, moreover, they had been treated for several years, according to the most approved routine method, without beneficial results. I could cite many more cases, less severe, indeed, and of shorter duration, but they one and all lead to the same pathological and practical inferences.

It is not, however, necessary to my position that, in all cases, the evidence of gastric, duodenic, or hepatic derangement be unequivocally manifested, since the sensibility of the internal surface of the stomach and intestines, or, in other words, the ganglionic sensibility there, is not the common sensibility of the nerves of the skin; the former being insensible to the touch and the application of ordinary stimuli. They are, however, endowed with a peculiar sensibility, unaccompanied by perception and consciousness, which has been termed organic, and which, when unduly excited, is sufficient to produce tetanus, convulsions, many anomalous affections, and even death, without pain, or consciousness of any sensation, in the seat of irritation. Thus a worm in the intestines will cause epilepsy, convulsions, or transient blindness; and this state of the ganglionic system calls a higher one into action.

Bichat\* says, and every man of experience will concur in the correctness of the statement, that in neuralgic paroxysms there are often spasmodic vomitings, increased action of the heart, &c. To be sure there are; and what are they all but emanations from the self-same efficient cause? It is not that a nerve, irritated at its remote extremity by a mere blast of cold air, or the action of the jaws in mastication, (and we shall frequently find a no more powerfully exciting agent at work upon the peripheral terminations), is capable of reacting with such force upon the internal viscera as to produce all the mischief of which Bichat complains. We know very well, and it is quite another matter, that in injuries produced by barbarous and extensive mutilations of living animals (or *vivisections*, as they have been smoothly termed), or in cases where nerves have been severely wounded by any species

\* Vide also the testimony of M. Piorry, *M&D. GAZ.* p. 530.

of mechanical violence, that the organs of digestion, circulation, and respiration, all become implicated, and that the morbid influence will be transmitted to them from the seat of injury. But what does it prove? Simply this: that nerves sufficiently irritated are capable of conveying a direct impression to organs remotely seated, and of spurring those organs into morbid action. Reverse the proposition, and it still holds true: the organs themselves, under due stimulation, will in like manner transmit their morbid influence to the extremities. I dwell upon this point the more strenuously, because many practitioners doubt the fact altogether, and appear to deem it impossible to approach the remote cause of neuralgia; and thus the practice becomes unequivocally empirical.

A patient calls upon his medical adviser, and assures him, to their joint-dissatisfaction, that he labours under tic douloureux, and has suffered from it, perhaps, for many months. The practitioner ponders over the case as if it were a complex problem, and at length prescribes a drachm of the carbonate of iron three or four times a day, thirty or forty minims of laudanum at night, and veratria ointment to be well rubbed into the seat of pain. In a short time the patient makes his re-appearance with superadded hemicrania, and altogether in so pitiable a condition as to excite fears of his mental sanity. Still, however, the routine practice is persevered in, until the disorder, perhaps, "wears itself out," or the unfortunate plaintiff is brought to death's door. I know this to have been the case; therefore I speak advisedly and confidently. Or take another example, for the truth of which I also vouch:—A lady of great nervous susceptibility was attacked with facial neuralgia of extreme violence. She was placed under the care of practitioners of great eminence, who, deeming the affection to arise from inflammatory action, bled, cupped, leeches, and salivated the mobile creature, until she was literally debilitated *secundum artem* into an universal tic. These things ought not to be; but so they are, and so they will continue, as long as pathologists repudiate the idea that the local affection depends on an efficient constitutional cause.

I pass over all the exciting causes which have been enumerated, as they

are mere exciting causes, and come at once to the consideration of the most unapproachable part of our subject, viz. the proximate cause of neuralgia; for I find I have greatly exceeded the limits I first proposed.

Tic douloureux, then, and the other forms of local neuralgia, are merely effects, the cause being irritation of a peculiar kind, which manifestly acts, not primarily on the extremities of the nerves, but on their central parts. The viscus most exposed to this primary disordered action is the liver, which, as we have seen, derives its nerves from the great solar plexus, and has connexion with the nerves of the stomach and par vagum. In many instances the affection can be distinctly traced, the pain in the extremity alternating with great regularity with a neuralgic affection of the liver; and even where this alternation of pain is not so evidently marked, minute examination will generally detect some aberration of function inconsistent with health; such as diminished secretion, giving rise to indigestion, costiveness, palpitation, clay-coloured stools, &c. This diminution of secretion may take place in an organ passively congested, owing to the blood finding an easier access into the inosculating veins from the increased diameter of the capillaries, than through the pores of the capillaries into the ramifications or cæca of the excretory tubes, owing to the morbid alteration of their physical condition; the pores themselves having become obstructed by the swelling or thickening of the parietes of the cæca\*.

"If it now be asked in what the irritation of the ganglionic centres consists, an answer can be found only in the phenomena that are observed in the viscera, and particularly in the epigastric region. These phenomena are undoubted evidences of augmented nervous function: sensations and movements take place, and are felt, which are not recognized by the brain in the healthy condition of the viscera. Of such, therefore, the proximate cause can be only a state of nutrition in the ganglionic centre, which supposes increased influx and retention of the vital fluid, the blood, from which all deposits, solid and fluid, are made†.

Thus it will be seen that the term

\* Billing's Principles of Medicine.

† Dr. Gully on Neuropathy.

*idiopathic* cannot with propriety be applied to a disorder affecting the remote extremities of nerves, for both reason and experience inform us that their ultimate ramifications are not liable to primary disease, but that it must depend upon their more central parts, and being, by a common law, referred to their extremities, it gives rise to a seeming aberration of function. Under the same explanation may be classed several disorders affecting the motor nerves, such as *idiopathic torticollis*, the origin of which may be frequently traced to ganglial irritation, arising from constitutional disturbance.

I have entered into the subject more fully in my little work on *Tic Douloureux*, as regards both the seat, nature, and cause of the affection; and have illustrated my positions by cases which appear to be confirmative of the views advanced on these essential points. Conforming, also, to the tenor of the general argument, I have ventured to adduce the following as the probable sequence of action which springs from the physical influence of the proximate cause.

First, there is disordered function from irritation of the proper nerves of the organ, arising from some noxious influence or impression which exhausts the nervous influence whence the capillaries derive their power. They thus become weakened, allow of over-distension, and are in a state of passive congestion or hyperæmia. The more vascular portion, or cineritious substance of the sympathetic being involved, it becomes irritated, and an undue supply of blood is consequently maintained. The proximate cause still continuing, the medullary part of the nervous system suffers, and evinces its effects by painful spasmodic contractions, not necessarily (as has been proved) in the seat of the affection, but oftener at the origins of the expanded sentient nerves in direct communication with the sympathetic.

It is obviously a matter of paramount importance to institute the most rigid inquiry into the details of every case that presents itself to our notice, in order to arrive, if possible, at a just diagnosis. It will be found, in some instances, exceedingly difficult to discriminate between the symptoms arising from organic disease (so closely do they approximate) and those from

mere functional disturbance, but even in cases *primâ facie* the most unpromising, much may be effected by a judicious line of proceeding. I have now under my care a complicated case of twelve years' duration, in which local disease and functional disorder coexist, each so operating and reacting upon the other as to render the case hopeless as regards an ultimate radical cure; but by steady perseverance in measures tending to allay morbid irritability, and to improve the general tone, the patient enjoys comparative ease, and perfect immunity from her former excruciating attacks.

I cannot conclude without expressing my sense of the great obligation I feel for the courtesy with which so large a space has been allotted to my communications in the pages of this valuable periodical; nor without earnestly entreating my medical brethren to cast aside some portion of their preconceived belief in the vague and most unsatisfactory doctrine of *sympathy* (which tends only to fetter and embarrass the scientific inquirer), and to neglect no opportunity of tracing, from the evidence afforded by the *aggregate of symptoms*, the secret source of this now mysterious malady. I can, without presumption, promise them, as an ample reward for the trouble of their investigation, that they will find neuralgia in all its forms, more especially in its earlier stages, to be a disorder whose origin can be satisfactorily traced, and when traced, one that will yield with peculiar facility to the action of appropriate remedies.

4, Parliament Street, Whitehall,  
Aug. 30, 1842.

## ON ARTIFICIAL CLIMATES

FOR THE RESTORATION AND PRESERVATION  
OF HEALTH.

BY JULIUS JEFFREYS, F.R.S., &c.

[Continued from p. 886.]

### *On the atmospheric treatment of the lungs and skin.*

THE chief objected facts and arguments against a downward ventilation have now been discussed, and the fact sufficiently established in the case of private dwelling rooms, as well as of public



buildings, that the downward is by far the preferable course for the current.

It has been further shown, that such is the course of the current with an open fire ventilation, and that this admits of being rendered very perfect; all prevailing defects arising from the imperfection of our ordinary measures, and not from any faults inherent in the open fire downward ventilation.

Our next duty is to examine the upward course ventilation, as it takes place in the system advocated by some persons, of employing a close stove to warm, and, it is said, to ventilate a room, and of closing the chimney.

It has been already clearly shown that the ventilation under such circumstances, so far from being sufficient, is very defective in the essential point—*quantity*. We shall also find that, small as its quantity is, the whole of it is not effective, as has been maintained, but that the very principle of the arrangement ensures the passing off, un-employed, of a large portion of it.

It is said, when a well-closed stove stands in a room, with a carefully closed chimney, that the fresh and colder air does, and should, enter the room at bottom, and press upwards above it the impure and warmer air, which thus passes off at the top of the room, by windows set ajar, or other apertures, always leaving behind it the purer air, every portion of which, therefore, is thoroughly effective in ventilating the room.

Is this a correct view of the case proposed? By no means. It is true, indeed, that the colder air which enters at bottom does not tend to rise and mix itself with the warmer air above it. Where then does it go, and how does it gain warmth? It cannot be warmed by the air lying over it, for we know that no warmth is communicated downwards through air. It is obvious, as there is always a quickly ascending current of air up the heated sides of the stove to the top of the room, that its place must be supplied by the cold air lying on the bottom of the room, which, from the nature of the case, must flow towards the stove, to supply the place of this ascending current. On reaching the stove, this fresh air necessarily becomes, from its position, the current in contact with the stove; which contact immediately converts it from the coolest into much

the hottest, and therefore lightest, air in the room. Gaining heat all the way up the sides of the stove, it acquires abundant buoyancy to cause it to rise to the top of the room, in the ascending column which we may always perceive to rise from a stove. Of this considerable column the fresh portion is no doubt a small part; but, according to the real principles in action, it is the whole of the little air that does enter. It thus arrives at the top of the room without having undergone any of the equable diffusion spoken of—without, in fact, ventilating it at all, excepting in so far as some extraneous causes happily disturb the action of the principle inherent in the arrangement. When at the top of the room it of course is in the position to pass off by the upper apertures, or windows set ajar, to let out, it is thought, the stalest air. Thus the freshest air, which ought to remain in, and ventilate the room, has, from the statics of the case, a *tendency* to be lost, by flowing along the bottom of the room to the stove, then ascending, heated by it, to the ceiling, and there finding its way out by the upper apertures, actually leaving the impure air behind it in the room. A small portion of the fresh air, instead of ascending by the stove, enters it to supply the draught. This quantity is, of course, withdrawn from the room before it can have been of any service towards ventilating it; for it merely travels along the very bottom of the room into the lowest part of the stove. In cases where the economy of fuel is carried to an extreme length, none of it being expended for the purpose of creating a ventilating draught—in such merely warming and not ventilating stoves, the quantity of air thus lost by entering the stove is no doubt small, yet it is proper to refer to it, and to remark that it also is lost to all useful purpose. Hence we find, on a little insight into the pneumatics of a room warmed with a close stove, that, according to the pressures unquestionably in action, there is a tendency for the whole of the entering air to pass off, having effected in no degree the purification of the atmosphere of the room.

It is proper here to admit, that, in practice, such a room is not thus left wholly without ventilation, but that part of the fresh air is diffused throughout it. But then this takes place



through the action of forces, and in a manner a freedom from which has been pronounced by the advocates of the close stove system one of its chief advantages.

While the little air that enters is creeping onwards towards the stove, and during its ascent up its sides, the movement of people in the room, and the warmth of their bodies, together with any difference of temperature between the air generally and the walls and furniture, all tend to create a number of disturbing currents, which serve to mix some of the fresh air up with the air generally, and thus to keep the latter from becoming very impure. So that, after all, the ventilation, such as it is, is connected with a mixing of the new with the old air—an occurrence the supposed avoidance of which, by the close stove system, has been the main ground of its advocacy.

That this is a fair and correct statement of the case I presume no person will question, who is prepared for its consideration, and will afford it due attention.

Hence we perceive that, with a fire and chimney closed, not only does very little air enter a room, but so far is this little from being advantageously employed, that there is a constant tendency, inherent in the pneumatics of the case, for much of it to pass off, without conducing at all to ventilate the room.

The next point of inquiry is, how far the close stove fulfils the important objects of powerful radiation.

The utmost heat to which a metallic surface, which has to warm air, should ever be allowed to attain, is far too feeble to warm by its radiance the walls and solid contents of a room in any adequate degree. Hence the walls and furniture absorb the heat radiant from the bodies of the persons present, without returning radiant heat to them. Though a point commonly overlooked, I have little doubt, as already stated, that it is one of the causes of the uncomfortable feeling experienced in rooms without a fire, of which the air only is warmed. Again, persons coming in chilly from without, require a powerful source of heat, from which to have warmth projected into their clothes. In a room of merely warm air, they may, and not unfrequently do

take cold, before they have time to get warm. What they require at the moment is what they instinctively desire, bright radiant heat—in common language, “a roast at the fire.” And before going out, an invalid will do well to put on his outer garments, and warm them thoroughly before a fire, folding in a stock of heat, which he will find to last him for some time after he goes out; until he has warmed himself by exercise. In these really important protective effects of radiation, a close stove is as deficient as it is comfortless in a dwelling-room.

Lastly, it is very difficult to prevent a stove, the fire of which is closed, from overheating the air. Because metal must be at a high temperature before it begins to act upon the air itself, it has been thought that only very hot stoves are injurious. I believe it will be found that the unwholesome quality of heated air arises, in general, from a change which takes place, not on the air itself, but on the particles of matter floating in it having an animal or vegetable origin. Minute as these are, they give to the air of all different localities their chief characteristic qualities, and establish the great difference in the character of that of the town and the country. These particles appear to be exsiccated at a very moderate heat, being high-dried, like malt; and to this change I would trace the readiness with which air is rendered more or less unwholesome by passing over metal not near hot enough to act at all upon the air itself. I have not yet seen any metallic stove *with a closed fire* which does not, I conceive, produce this change on the organic matter in it in a greater or less degree.

Again, there are serious defects of some stoves, which it would not be fair to charge all with. A stove which has a pretty large flue entering the chimney, and which allows heat enough to pass into the chimney to create some considerable suction, will not be at all liable to discharge impure gases into a room. If a hole be made in any part of such a stove, air will be drawn in, showing that it need not have the unattainable property of being *air-tight* to prevent it from damaging the purity of the air by sending noxious gases through its crevices, since there is not any pressure from within tending to cause the gaseous contents to ooze out,

but, on the contrary, a pressure from without sending air into the stove through any such crevices, to supply the suction, or draught, of the chimney. Some stoves, however, are chargeable with this defect in a serious degree. When the draught is very sluggish, and the flue into the chimney very small, there will be, especially if the stove is bulky, a constant pressure of the heated gases to escape at all upper crevices of the stove, and of the heavy and less heated to leak out at all lower ones; and it will not do in practice to calculate on such fitting, in any but expensive work, as shall guard against this. Such stoves appear to have been long known abroad, and in this country are to be met with possessing these defects in a greater or less degree; especially one modification of them, which has attracted great attraction of late years. In it the endeavour to carry the economy of fuel to an unparalleled, and I conceive very unimportant length, has led to the maintenance of so sluggish a draught through the fire, as to render this stove particularly prone to leak air in the manner above described, unless made with the greatest care; and this sluggish draught has rendered it to some small extent liable to explosions from the collection of inflammable gases in the capacious body of the stove, upon any bituminous fuel, such as common coal, being thrown into the fire. It has been thought that such collections of gases could not explode, provided the door were not opened, and that then the large aperture of the open door would deprive them of any bursting force. But the feeble draught of such stoves cannot prevent currents of wind from occasionally blowing down the chimney into which the flue enters, and pressing air into the stove from the chimney; such air is abundantly oxygenous for forming an explosive mixture with any inflammable gases in the stove. As the stove in such a case is entirely closed, with the exception of the small pipe entering the chimney, the severity of an explosion would be at once accounted for; and it is equally liable to take place when no person is present. Since an accident may happen in this manner, I think we ought not too hastily to reject the opinions of those who appear upon other sufficient grounds to trace accidents to spontaneous explosions of such

stoves carelessly managed; yet I conceive the chance of an explosion in any one case must be too small to afford ground for alarm. However serious such an accident may be when it does happen, its rare occurrence renders it a very minor objection to those against the system itself, which is one, in its very nature, of altogether insufficient ventilation; both from the very small supply of air to such rooms, and from its tendency to pass off without ventilating them.

The only case in which the system under review is sufficiently wholesome, is that of a spacious house, of which the passages are warmed, and of which the inner doors may therefore be kept open, especially if there are open fires in any of the rooms. These so materially increase the passage of air through a house, that a single open fire, particularly if the door of that room be kept open, will greatly aid the feeble ventilation of all the others. In a large house, also, the bodies of the inhabitants bear a very small proportion to its capacious space. Nevertheless, though not directly injurious, its atmosphere lacks that abundant renewal so much to be desired. The great majority of houses and offices are of a much more confined description, and it is against the adoption of such a system in them, and the rejection of open fires, I have felt it necessary earnestly to contend.

This system was so entirely opposed to the views to which, by a careful study of the subject I had been led many years previously, and which every successive year had served to confirm, that, upon its first introduction, I took considerable pains to set forth its chief defects in a series of papers in the *MEDICAL GAZETTE*, published in 1838.

The advantages, however, which it promised, especially that of extensive economy, were too inviting to the public, and it met with such general support on the part of journalists at the time, that I could not hope my efforts would receive attention beyond the sphere of the profession. That they were not without use within it, I have had frequent reason to believe. With the generality of persons who were attracted to the system, *experience* only could have influence. The great majority of them are, I conceive, now prepared to admit

to the full the defects pointed out; and this, although in most instances the close-stove system has been tried in one or two rooms only of a house: whereas, had the injurious effects been still more masked, and the system of closing up all chimneys been generally adopted, and extended to the houses of the poor, I cannot doubt that, in large towns and cities, infectious diseases would, from time to time, have assumed the form of destructive pestilences; for I must affirm that the present closeness of the rooms of the poor is a state of salubrity compared with what would have been their state; and that they are close in spite of the open chimney, and not, as has been very incorrectly maintained, because of it. I have found the air of small rooms warmed with stoves of this description, made with every attention, in as unwholesome a state as could have been anticipated; and I have known an immediate and manifest improvement to take place upon a return to the open fire. In some instances it was impossible not to trace to the former very injurious effects upon the health.

The other branch of our inquiry is the extent to which the system of open chimneys and fires answers to that which right principle demands. This question resolves itself into two others—namely, how far the system, as it now exists, does, and how far it might, fulfil the various objects of a perfect system.

With respect to ventilation, I have already shown how admirably it supplies the steady and sufficient power required, and how superior is the downward ventilation which it maintains. We have only to close all lower apertures with moderate care, and provide inlets for air at the top of the room on the side next a passage, to render the ventilation as perfect as in practice is possible. We can bear much more of even cold air to be admitted so far above our heads, especially if it is pressed in horizontally through side openings. Its mixing with the rest of the air by tempering it, enables us to bear with comfort the entry of so much air, that the mixing is of small moment. But to guard against draughts, the entering air ought to be previously warmed. Where the grate is of the usual kind, it should enter the room by numerous small openings close to the ceiling, in the side next the passage

which supplies the warmed air; and it may then come in very freely. The warming principle of the open fire, even in its present defective form, has also great advantages over any system of close stoves. The bright radiant heat from it fulfils in the very best manner the various objects for which it was shown the closed fire was so defective. It is projected to any distance against the walls, floor, furniture, &c. causing them secondarily to warm, instead of chill, our air, and ourselves. They become so many stoves of a gentle warmth which cannot damage the air flowing by them. Of all of them the carpet is, perhaps, the most perfect secondary stove, if the fender is not too high, and next to it may be the articles of furniture facing the fire. The radiant heat also supplies that ready stock which it is desirable to have projected into our clothing before, and especially after, exposure to much cold or damp. Though habitually sitting over a fire is an excessive and unwholesome use of it, and therefore improper, I cannot doubt that the occasional "roast at the fire" is very beneficial; while, provided with this resource when chilly, we are enabled to reside in a much more cool and invigorating atmosphere than would otherwise answer. This habitual residence in a fresh atmosphere renders us much less chilly than our continental neighbours, who have not these advantages. Hence Englishmen have not their sluggish aversion to go frequently out of doors during a winter's day, and are able, to the surprise of them, to ride in open vehicles in weather in which they could not attempt it without much more wrapping up. To this freshness of the air of our houses, and to the activity and readiness to go out which it imparts, I have little hesitation in attributing, as a chief cause, the characteristic ruddiness of English children, and the lengthened period to which females here maintain their looks. Any one who has studied the power of climate over the constitution and temperament, and especially the influence of a close and unrenewed atmosphere, must perceive in the freshness of the air of English houses a sufficient cause for much of the national activity. Nothing is more conducive to chilliness, languor, and inertness, than an habitual residence in a confined atmosphere at a high temperature; nor, on the other

hand, is any thing more permanently invigorating to the mind as well as body than a constantly renewed atmosphere, cool enough to give tone to the system, without chilling, or exciting unduly any organ. As before observed, the bright radiance of an open fire, by which the feeling of cold from exposure is at once dissipated, proves a reserve at command which renders us less fearful of going out in cold weather; and it is, in fact, constantly preventive of the injurious effects of chills; while all that commonly receives attention is the *comfort* of the "warm at the fire."

But while we appreciate the incomparable advantages of open fires, it is proper that we should not overlook the defects of the form in which they are usually employed.

There are many domestic wants which are closely connected with our comfort, health, and even life, and which involve in them questions of much difficulty, and not in one science only, but in several, which are yet left to be provided by persons who do not even profess an acquaintance with the higher branches of knowledge, and whose minds have never been familiarised to such severe studies. In the progress of civilization, the error will be perceived of leaving duties of a strictly scientific nature to be performed by those who have little or no acquaintance with the various branches of knowledge they require. The most successful cultivators of science will then no more consider such duties beneath them, than they now do those of a profession which at no very distant period was, through a similar prejudice, associated with the business of the barber. Until then, they who have some acquaintance with those branches of knowledge will continue to witness, with the unpleasant feeling which error always excites, deviations from sound principles in every direction in domestic arrangements, even in the most costly and stately.

In the instance therefore of grates, we must not be surprised at the small progress in the path of improvement which has been made; or even at their having retrograded of late years. These important articles of our domestic wants have been afforded little of the attention of qualified persons since the time of Count Rumford, whose successful efforts were an instance of the advan-

tageous application of science to such objects. But there has not been enough of such knowledge prevalent amongst those concerned in the manufacture of them, even to preserve attention to the rules he laid down; hence, by degrees, grates have become more and more defective in their construction. The surrounding the fire with *brick* instead of *metal*, which he so rightly enforced, has, on account of the trifling reason of the former not lasting so long, been very generally given up. To place burning fuel in such an iron receptacle as an ordinary grate is as wasteful and ignorant an act, though not commonly perceived to be so, as to employ a cracked vessel or a cullender to hold a useful and somewhat expensive liquid. So large a part of the heat leaks away, that the fuel is chilled into extinction where it touches the metal, and much of it smoulders away instead of burning at a high temperature, which would cause it to consume more oxygen, and give out much more heat. From a fire which burns dully, all that can be volatilized passes off unconsumed; and of the solid carbon a large part unites with oxygen in the first proportion, forming carbonic oxide; and thus giving out little more than half the heat developed when the combustion is complete, and carbonic acid is the product. This evil has been increased by the immense mass of *continuous* metal of which modern stove-grates are made. This mass soaks up heat with such rapidity as to render it difficult to light the fire in the first instance, and to be a constant cause of the fire going out. To excite the combustion, twice the quantity of inflammable fuel, as wood, is required, which would otherwise be necessary; and, while burning, the heat is continually leaking out into the metal—part passing off behind it, since it never fits the masonry well, and part being yielded to the current of air passing in contact with the stove, just before it is carried up the chimney. As if to complete this wasteful process, for some years past the *hollow back* has been introduced, perforated with holes. This back causes a current of air to rise up behind the fire, consuming fuel by exciting combustion there, and then carrying the whole of that heat away up the chimney unemployed. Without entering further into detail, I may



remark that the subject is well worthy the attention of those who are concerned in the treatment of invalids. The bed-room fire, which many persons ought to be provided with, can hardly be commanded in some grates, from its constant tendency to go out, and the trouble to attendants which it occasions. The common fire-place, and grate, are defective in many other points, which involve curious and interesting questions in pneumatics and chemical physics, and which are of no small importance to our comfort, since upon their correctness depend the economy and effect of our fuel, and the proper draught of our chimneys. These points, however, though of great importance to invalids, do not bear a sufficiently direct relation to medicine to admit of their being with propriety considered in this place.

The conclusion to which a careful review of the comparative merits of the two systems has brought us, proves greatly in favour of the open fire and chimney, in their conjoint capacity of an effective ventilating and warming apparatus. The defects in their usual forms, which candour requires that we should admit, are such as may, with due care, be obviated to a considerable extent, even while little deviation is made from established forms. For a more perfect system, which shall embrace all desiderata of importance, a construction of an entirely new kind is necessary. Nothing is more easy to a mind practised in invention than to devise an apparatus possessing some desirable qualities, provided it may be defective in other respects. It is when no one point is allowed to give way to another—when, having ranged before the mind, in the order of their importance, all objects requiring attention, none of them are neglected in our plan—that the difficulty becomes serious of devising means for giving due effect to each and all of them. It is this cause, and not any absolute impossibility involved in the case, which has retarded so long the improvement of our domestic fire-place and grate.

Under the conviction that dwelling apartments, those of pulmonary invalids especially, ought to be provided with an atmosphere frequently renewed by a constant supply of fresh air, which, before its diffusion in the room, was duly warmed, moistened, and, in towns,

filtered; and that rooms ought, for the reasons fully stated above, to be also provided with a source of bright radiant heat within them, I was led several years ago to attempt to embody, in a single and compact apparatus, these and other points; such as the maintaining with certainty all the warming surfaces of metal at a temperature not exceeding that of boiling water, together with others which I need not here detail. The importance, for the preservation, and, indeed, for aiding in the restoration, of health, of an apparatus which should successfully combine all these qualifications, rendered the contriving of it an object well worthy of the time and thought necessary. But novel forms involve with them new methods of construction. In the present case, the forms to be given to the materials were unavoidably such as proved to manufacturers difficult and expensive to construct, without modifying them so far as to disturb the leading principles of the apparatus. In such a case the task of an inventor is effected but in part when his forms are decided upon; he is still called upon to devise the means for giving these forms, which are difficult to command in rigid matter, practical utility; and in such a manner as to be available to the many who cannot, even for health's sake, incur any heavy expense. They who are not familiar with occupations of the mind of this nature would be surprised at the demand upon mental resources made by such an undertaking.

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## MEDICAL GAZETTE.

*Friday, September 16, 1842.*

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*"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."*

CICERO.

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## MEDICAL ASSOCIATIONS.

A FEW years ago, medical associations, in their present form, were almost unknown; a small number only of the members of the profession being united into a few companies or societies for the purpose of collecting and publishing medical facts and observations, and



advancing the science of medicine. In the present age, however, a fresh system has arisen, which forms, as it were, a new feature in the history of medicine, and will probably be ultimately attended with some important results. Various associations have been formed, and others are growing up around us, which comprise among their members a great number of the practitioners in the country, who, for various reasons, are induced to connect themselves with one or other of these recently instituted bodies. In their original constitution these associations were, for the most part, intended chiefly as means of facilitating the communication of interesting and instructive facts from one member to another. They were organs for the dissemination, among a large number, of the information which each individual collected, and thus far they resembled the societies from which they, in some degree, originated, and upon the model of which they were formed.

But it was not to be supposed that a great number of practitioners should long remain united into one body, and feel conscious of possessing power, without the desire to use it; or that they should continue uninfluenced by the general political feeling of the day, and refrain from entering upon the subject of reform which so nearly interests each individual member. When once this gained an entrance into their discussions, we need not be surprised that so engrossing a topic should occupy so large a share of them. Thus, although the professed and primary object of the associations was to advance the science of medicine, and to facilitate the diffusion of information among their members, the standard of politics was soon raised in them, and in some gained the ascendancy. Latterly, indeed, associations have been

formed whose sole purpose is the consideration of medical politics.

We by no means wish it to be supposed that we object to the course which has been taken in this respect. It is but a natural and almost necessary consequence, that the attention of a society should be engrossed with the interests of each member. Neither is it an undesirable consequence, inasmuch as it is from the investigation of the wants of the profession by bodies of this sort that we must anticipate satisfactory results, and look for the suggestion of the best means of obviating the grievances under which the profession labours.

Such being the object, and such having been the course of these associations, it may be fairly asked, what has been their effect? They have already existed, some of them at least, for several years. The Provincial Medical and Surgical Association has, for more than ten years, embodied a large number of the members of the profession. What, then, are the advantages which it as well as others have produced? In how great a degree have they operated to assist in the advance of science, and in bringing forward sound principles of medical reform? These are questions to which it may not be easy to give a direct answer. To trace back the effects which may have been produced to their immediate causes, is often difficult, especially to the satisfaction of others. But we should not, therefore, too hastily conclude that they have been altogether without benefit. We grant that they have not done what their originators hoped and their early members expected of them; we may say that they have not effected quite that which it might have been fairly anticipated they would have done. Still, their operation has, upon the

whole, been good; they have no doubt aided in advancing the science of medicine by facilitating the diffusion of information, and they have tended in some measure to improve and elevate the general character of the profession.

These associations are, too, in some measure, calculated to fill up that blank which has so long been complained of in the medical world—that want of union among its members, which has formed so powerful an obstacle to the carrying out of any general scheme of improvement. The profession is composed of so many separate portions having but few connecting links. Its members are disunited, and it is extremely difficult to devise the means of promoting unison of sentiment and action among them. The various propositions which are brought forward are so different as to neutralize one another, and so numerous as to render the whole abortive. Each is the product of an individual mind, and, as such, is not unfrequently regulated by private feelings and interest, or, in some way or other, is unsuited to the general mass of the profession. Even if it be in itself intrinsically good, it brings with it but little weight of authority, and for this reason often falls to the ground. Though numerous, the members of the medical profession are, from their want of union, confessedly weak; they possess but little influence in public matters, and can bring but little power to bear upon the legislature in time of need. It is the main advantage of an association that it binds these scattered, and, in their single operation, feeble members together, and unites them, like the bundle of sticks in the fable, into one effective force.

Never, perhaps, was the want of this unison of concentration and force more strongly shown than in the investigations into the subject of reform, which

have now so long harassed the medical world. How great has been, and still is, the discrepancy of opinion! how difficult is it to ascertain the sentiments of any large number of the profession! The cry of a few noisy persons is apt to be esteemed as the voice of the faculty at large, and the opinions of these few are palmed upon us as offering the sentiments of many, when, in reality, they represent only the wants of their originators. We do not pretend that associations of medical men will prevent all this—discrepancy of opinion must still remain—but we should, at least, be able to learn, with greater accuracy, the sentiments of the profession; and there would be rather more stability given to the propositions which are brought forward, if they originated with a collected number of men. Had the subject of reform received in its earlier stages the careful consideration of any large united body of the profession, we should have had a chance of knowing more clearly what were the real wants of its members. There is no doubt that fair propositions of improvement, made by such an assembly, and backed by their authority, would have received the earlier attention of the legislature; various questions would, ere this, have been decided, and the present disturbed state of things would probably have been at an end.

At the same time, we must again repeat that these associations have not realized the expectations that were formed of them in their commencement. Their meetings are often occupied by dull and useless discussions. The subjects which are of most importance do not receive their full share of attention, and hence it is that hitherto they have not been efficient organs in carrying out any schemes for the improvement of the profession.

It should, however, be observed that,

after all, the real benefit of associations of medical men is, at present, less to be anticipated from any striking improvements or alterations they may produce, than from the silent and beneficial influence which they exercise upon the character of their members, by promoting mutual intercourse, and uniting them into one body. Nothing is more likely than this to abolish those petty dissensions whose baneful effect has been so long felt in the profession, and to promote a high and honourable feeling among medical men. By associating together they learn to consider themselves as members of one body—to take a mutual interest in each other's concerns. They consider it the bounden duty of each to maintain the high character of the profession, and are, therefore, more willing to submit to slight individual privations which may be required for the welfare of the whole.

The association of medical men, too, is likely to preserve in proper esteem the etiquette of the profession, that *lex non scripta* the proper observance of which is of so high importance to the honourable practice of medicine, and the comfort of those who are engaged in it.

Many other advantages of association might be mentioned, as well as some disadvantages, but it is unnecessary to enter further upon the subject. We need only state our opinion that, upon the whole, this union of medical men into bodies has been productive of some good, and might, if those bodies were properly managed, be followed by much further benefit. But, at present, these associations have certainly fallen short of the expectations which were, and reasonably might be, formed of them.

## RECOVERY OF PENALTIES

BY

THE MASTER WARDENS AND SOCIETY OF  
APOTHECARIES v. WILLETT.

Chester Summer Assizes\*.

THIS was an action for the recovery of penalties alleged to have been incurred by the defendant by having practised as an apothecary at Great Budworth, in Cheshire, without having obtained a certificate of his qualification to practise, as required by the 55th George the 3d, cap. 194.

Mr. John Jervis and Mr. E. V. Williams appeared for the plaintiffs; the defendant did not appear.

Mr. Jervis stated the case to the jury: the defendant had practised three years at Great Budworth as an apothecary, without having given the proof which the law had required of his competency for such practice, and the Society's remonstrances against his continuing to practise without legal qualification being disregarded, they had been under the necessity of resorting to the present proceedings. The Society's only object was to enforce the law, and publicly announce that unqualified persons would not be allowed to practise with impunity; they would therefore be satisfied with a verdict for a single penalty. The following witnesses were then called:—

Thomas Clarke stated that he was a farmer, living at Seven Oaks, near Northwich, that he was taken ill in the middle of January last, and was attended by defendant for upwards of a month; his disease was the small-pox. He lost his eye from the disease. The defendant supplied him with medicine; the defendant sent in a bill, which was paid by the witness's father.

Herbert Thomas proved that he was in the habit of fetching medicine from the defendant's house for the last witness during his illness.

The bill was then put in, which charged for journeys and medicines, and which was receipted by the defendant.

Harriett Nixon, the wife of Abraham Nixon, stated that she lived at Great Budworth; her husband was ill last spring; he had a cough; he was attended by the defendant for a week or more; the witness fetched physic for her husband from the defendant's house; the defendant said he had the typhus fever; the defendant had a ham of the witness, it weighed thirteen pounds, and was to be 9d. per pound; the defendant had not paid for it; the witness will never ask him for it.

Sarah Johnson, the mother of the last witness, remembered her son-in-law being ill;

\* This was forwarded to us some weeks ago, and accidentally omitted. We think it right towards all parties to give it now.—ED. GAZ.

he had a bad cough, and complained of his breathing; she went for the defendant; they owed him a small bill of 4s. 1d. for a former attendance; he hesitated about coming; he did not say whether he would come or not; they had got a ham in the house; the witness did not know what to do; she told the defendant he might have the ham to settle the bill; after the defendant had seen Abraham Nixon, he told the witness he had the typhus fever; the witness once fetched medicine for Nixon from the defendant's house; it was pills.

Mr. Jervis stated that he was prepared to give evidence of several other cases, if it were necessary.

Lord Abinger summed up the case to the jury:—It was an action brought by the Apothecaries' Company for the purpose of preventing an uneducated person from practising as an Apothecary, and it was of very great importance to the public health that persons who were incapable, from a deficient education, of understanding the medicines they dispensed, should be prohibited from practising altogether. It having been found necessary to exclude from the practice of the profession all those who had not been properly educated for it, an act was passed for that purpose in the reign of George the 3d, by which it was enacted, that if any man should presume to practise as an Apothecary, unless he had been before practising as such (for the law did not affect old practitioners), without having a certificate from Apothecaries' Hall, he should be liable to a penalty of £20. There was no evidence here that the defendant was in practice at any time before the month of July 1839, or a short time before. It did not appear that he had a certificate; he made no defence; and therefore it appeared to the learned judge that the jury might fairly conclude that he was not qualified to act as an Apothecary.

The learned judge, in commenting upon the evidence which had been given of the defendant's practice, observed to the jury, that the defendant had not practised without remuneration: he had done it for emolument; and that it appeared to him that if the jury saw no objection to the evidence, a sufficient case had been made out for a verdict for a single penalty.

The jury returned a verdict for the plaintiffs for one penalty.

### THE CORONER AND THE MEDICAL WITNESS.

[THE following extract from the *Lancet*, coming as it does from authority, is deserving of attention.]

*To the Editor of THE LANCET.*

SIR,—In consequence of your acting as

coroner in a metropolitan county, and as your experience and example must have great weight throughout the kingdom, I beg to ask you a question founded on the following facts. A short time since, in this neighbourhood, the two cases occurred which I am about to describe. A carter, on returning with a load of hay, fell in the road immediately before the near wheel of his cart which crushed his body dreadfully and killed him on the spot. He did not move or speak afterwards. I was sent for and attended immediately a distance of several miles, but my presence was of no use. Three men and a boy witnessed the accident. In the second case the wife of a blacksmith was at breakfast with her son, a young man, her sister, and a lodger in the house. While eating some broth she dropped from her chair, and expired, instantly, it is said, as she was never seen to move again. I was sent for in this case also, and went at once, but I did not reach the house (as it was six miles and a quarter from my residence) until the woman had been dead two hours. Now, Sir, as in both of these cases inquests were held, and I was not summoned on either occasion, I am very desirous of learning—and I am sure that many of my professional brethren in this quarter would be equally anxious to know—if this was correct conduct on the part of the coroner; and I shall be greatly obliged if you will address to me a private answer to the question. I am, &c.

P. S.—I should add, that I did not obtain from the relatives a farthing for my attendance in either case.

The letter which we here insert has been selected for publication from a large number which have been addressed to us on a similar subject. We have excluded all names, and believe it to be right to answer it publicly.

More misapprehension appears to prevail with regard to the respective duties of coroners and medical practitioners in the holding of inquests than on any other subject with which we are acquainted. It is a complaint, repeatedly urged by medical gentlemen, that they are not called as witnesses at inquests. This is a current complaint, and we are not at this moment conscious of a similar one being urged by any other class of the community, with respect to this or any other species of inquiry. Far be it from us to allege that the complaints of our professional brethren on this head are always made without foundation, but at the same time we are bound to state that it appears to us that, in a majority of instances, they are groundlessly advanced. In the cases mentioned by the correspondent whose letter we have just inserted, the coroner was not only justified in not summoning the medical practitioner, but he would have been fairly chargeable with im-

properly applying the public money which is entrusted to his distribution, if he *had* summoned the medical practitioner in either of the cases cited. In the first, the poor man was killed on the spot, four persons having witnessed the accident, the body at the same time having been dreadfully crushed. The surgeon arrived long after the death. What could he prove? What information could he furnish to the jury? Assuredly the eye-witnesses of the transaction could supply, and more than supply, the evidence which was required on such an occasion. In the second case, there was equal facility of obtaining from the spectators of the catastrophe the character and nature of the death. The surgeon only comes to observe the cold and lifeless body. In neither case is there mystery, wicked rumour, dark suspicion, or a sign of wrong doing. What, then, is the testimony which the medical practitioner in this case, or which medical gentlemen in other cases of a similar description, can offer, to guide the decision of the jury? "But," exclaims our correspondent, "I was not paid by the relations in either case." Here it is that the shoe pinches in this and all the like cases. As the *relations* did not pay, the *Coroner* ought to have summoned the medical practitioner, in order that the latter might receive his reward *at the inquest*! Any Coroner who summons a surgeon to an inquest for such a purpose would violate the oath that he has taken, and be guilty of most dishonest conduct in the discharge of his duty. He has no right to summon a medical witness from any such motive. The Medical Witnesses' Act confers upon him no such power or authority,—offers to him no justification or excuse for such a proceeding. We are quite aware of the hardships which our medical brethren suffer in consequence of their not being paid for their attendance in numerous cases of accident and sudden death occurring to poor persons; but, great as are the losses and annoyances to which they are exposed in such cases, still, nothing could justify a Coroner in summoning a medical practitioner at an inquest merely for the purpose of paying him for services which had been rendered in the character of a medical attendant. The "witness" is simply to be paid as a *witness*, and in no other character; and if the Coroner depart from the rigid rule which he ought to observe in regulating the business of his court, by summoning a person, and paying him, *nominally as a witness*, while the individual is *ostensibly paid in another capacity*, such a Coroner violates his trust, acts most dishonestly by a public fund which is committed to his charge, and by his conduct shows that he is utterly unqualified for occupying the important office in which he is placed.

We should be heartily rejoiced if we could find that our professional brethren had deliberated on this subject dispassionately, and permitted their minds to assume a correct and healthy mode of thinking on the point under consideration.

#### REMARKABLE CASE OF RETENTION OF URINE.

THE patient whose case is about to be related was a man, 58 years old, an ironmonger, formerly a soldier, rather tall, thin, and of an extremely nervous habit. Owing to a remarkable peculiarity of the urinary organs, this man could never drink the smallest quantity of wine without instantly experiencing an irresistible desire to pass water, accompanied by violent and agonizing pain referred to the neck of the bladder. This peculiarity manifested itself when he was about twenty-five years of age, without any assignable cause, and has continued up to the present, notwithstanding the different changes in life he has experienced, and the great fatigue he underwent while in the army during the wars of the Empire. For many years he never drank any thing but water. In 1839 his business obliged him to leave Paris; and being invited by other merchants to breakfast with them, was obliged, lest he should give offence, to break through his resolution, and take some wine. He had scarcely swallowed two glasses of sherry, when the desire to pass water came on, and, as before, was accompanied by excruciating pain and the sense of constriction at the neck of the bladder. Some hours after, the patient, having frequently tried ineffectually to empty his bladder, sent for the physician who reports the case, when a catheter being passed, about three pints of limpid urine were drawn off. For some days after he suffered from frequent calls to pass water; but at the end of ten days he was perfectly well, with the exception of a slight uneasiness at the neck of the bladder. Two years after, having again committed the same indiscretion, he was affected with similar symptoms, and was obliged to resort to the same means for relief. On this occasion, however, the bladder did not so soon regain its functions, and had to be emptied by the catheter three times; on each occasion about three pints of urine were taken away.

The treatment which was employed after the introduction of the catheter, consisted of leeches to perineum, hip baths, and poultices over the pubis.—*Revue Medicale*; and *Dublin Journal*.



## LOCK HOSPITAL.

MR. LANE has been elected Assistant-Surgeon to this institution.

## LITERARY NOTICE.

MR. CHURCHILL is preparing for immediate publication :—

A System of Practical Surgery : illustrated with 220 woodcuts. By William Fergusson, F.R.S.E., Professor of Surgery in King's College, London, &c.

Principles of Medicine ; comprehending General Pathology and Therapeutics. By Charles J. B. Williams, M.D. F.R.S., Professor of Medicine in University College, London.

Diseases of the Skin : a Practical and Theoretical Treatise on the Diagnosis, Pathology, and Treatment of Cutaneous Diseases ; arranged according to a Natural System of Classification, and preceded by an Outline of the Anatomy and Physiology of the Skin. By Erasmus Wilson, Lecturer on Anatomy and Physiology in the Middlesex Hospital Medical School, &c. &c.

Clinical Midwifery : with the Histories of Four Hundred Cases of Difficult Labour, and Practical Inferences. By Robert Lee, M.D. F.R.S., Fellow of the Royal College of Physicians, Lecturer on Midwifery at St. George's Hospital, &c. &c.

A Manual of Medical Jurisprudence. By Alfred S. Taylor, Lecturer on Medical Jurisprudence and Chemistry at Guy's Hospital, &c.

On the Chemical Discrimination of Vesical Calculi. By E. A. Scharling, Professor of Chemistry in the University of Copenhagen. Translated, with an Appendix containing Practical Directions for the Recognition of Calculi, by S. Elliott Hoskins, M.D.

Practical Observations in Midwifery ; with Cases in Illustration. Second Edition, with additions ; to be comprised in one 8vo. volume. By John Ramsbotham, M.D., late Lecturer on Midwifery at the London Hospital, Consulting Physician to the Royal Maternity Charity, &c. &c.

The Prescriber's Pharmacopœia. By a Practising Physician. Second Edition, revised, with additions.

## APOTHECARIES' HALL.

## LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, September 8, 1842.

W. Brumfit, Shipley.—J. Wilkins, Honiton.—R. Colgate, Dorking.—G. Ross, Davenport.—R. N. Newcomb, Carby, Lincolnshire.

## A TABLE OF MORTALITY FOR THE METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending Saturday, September 3, 1842.

Small Pox .....	9
Measles .....	18
Scarlatina .....	38
Whooping Cough .....	6
Croup .....	6
Thrush .....	7
Diarrhoea .....	63
Dysentery .....	7
Cholera .....	18
Influenza.....	0
Typhus .....	26
Erysipelas .....	5
Syphilis .....	3
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	149
Diseases of the Lungs and other Organs of Respiration .....	181
Diseases of the Heart and Blood-vessels ....	20
Diseases of the Stomach, Liver, and other Organs of Digestion .....	71
Diseases of the Kidneys, &c.....	8
Childbed .....	2
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	5
Rheumatism .....	4
Diseases of Joints, &c. ....	4
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c.....	1
Diseases of Uncertain Seat .....	110
Old Age or Natural Decay.....	49
Deaths by Violence, Privation, or Intemperance .....	19
Causes not specified .....	0

Deaths from all Causes ..... 827

## METEOROLOGICAL JOURNAL.

September.	THERMOMETER.	BAROMETER.
Wednesday 7	from 45 to 60	29.85 to 29.83
Thursday . 8	60 58	29.89 29.85
Friday . . . 9	51 64	29.51 29.42
Saturday . 10	53 61	29.38 29.56
Sunday . . 11	51 60	29.62 29.68
Monday . . 12	54 64	29.73 29.80
Tuesday . 13	48 64	30.00 30.00

Wind, S. and S.W. on the 7th, 8th, 9th, and morning of the 10th, since N.W. and N.

The 7th, clear till the evening, when a severe storm of thunder and lightning of remarkable vividness, accompanied by heavy rain, passed over. The 8th and 9th cloudy, with frequent rain. The 10th, showery, with intervals of sunshine. The 11th, generally clear, showers in the afternoon. The 12th and 13th, generally clear.

Rain fallen, 1 inch, and .325 of an inch.

## NOTICES.

We have been obliged to postpone some papers, and to give 27 numbers instead of 26 in the present volume, in order to finish Dr. Watson's and Mr. Phillips's valuable Lectures. Our next volume will commence on the 30th.

The letter of a Student of University College Hospital cannot be given unless authenticated.

WILSON & OGILVY, 57, Skinner Street, London.

# THE LONDON MEDICAL GAZETTE,

BRING A  
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

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FRIDAY, SEPTEMBER 23, 1842.

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LECTURES  
ON THE  
PRINCIPLES AND PRACTICE OF  
PHYSIC,

*Delivered at King's College, London,*

BY DR. WATSON.

*Herpes — Eczema — Pompholix — Lepra —  
Psoriasis — Impetigo — Boils — Carbuncle  
— Purpura — Scurvy. — Conclusion of the  
course.*

If you look at the lists of *genera* and *species* appended to the various works which treat exclusively of cutaneous diseases, you will find that they are exceedingly numerous. But these disorders differ widely in their relative importance; and the principles upon which their remedial management proceeds are not so greatly diversified as these "tables of contents" might lead you to suppose. I have spoken pretty fully of the most serious and interesting of these maladies—I mean of the febrile exanthemata; but I have no time left for pursuing in detail the host of chronic affections to which the human skin is subject. Nor do I much regret this. To become expert in the diagnosis of these blemishes, and in curing such as are curable by our art, you must see them with your own eyes. Verbal descriptions of their changeful characters are of comparatively little service or interest. They are among the things that require to be "*oculis subjecta fidelibus*." Even pictured representations convey but an inadequate notion of the morbid appearances they are designed to portray. The lecturer on skin diseases should have actual patients before him, to whose bodies he could point.

In this, the final lecture of the course, I can do no more than offer you some very cursory remarks upon some of the genera into which nosologists have distributed this

class of disorders; and I may premise, that the treatment of the genus includes for the most part that of the species.

*Vesicles* are, as you know, small transparent elevations formed by a drop of aqueous fluid effused beneath the cuticle. Sometimes they are thinly scattered over the surface; sometimes collected into clusters: sometimes situated on a red patch of skin; sometimes quite free from redness. The whole crop comes out at once in some cases; in others the vesicles appear in irregular succession. They terminate also in various ways: by the reabsorption of the liquid, and slight desquamation; by the giving way of the cuticle, and the formation of little scabs, under which new cuticle is generated; and sometimes, though rarely, by ulceration.

Of the vesicular class of cutaneous disorders I have already described the three most important; namely, cow-pox, chicken-pox, and the itch.

Another not uninteresting genus of this class is *Herpes*. This is a transient non-contagious eruption, consisting of red patches of irregular form and variable size, upon each of which stands a crop of vesicles. The eruption runs a definite course; and its several periods—its beginning, its increase, its acme, and its decline—are completed, when its progress is not interfered with, in about ten days. These characters, once known, are easily recognized; and it is of importance that you should recognize them. Not that the disorder itself is of any great moment; nor that it is at all under the influence of remedies; but because it may be confounded with some graver malady. For example, *Herpes praputialis* is a very common, and a very trifling species, affecting the foreskin; but it might readily be mistaken for a result of the poison of syphilis, and so cause much alarm and distress to the subject of it, and entail upon him perhaps a needless course of mercury, and bring unmerited suspicion upon the person with whom, whether law-

fully or unlawfully, he may have been connected. It has nothing whatever to do with sexual intercourse; and it requires no treatment beyond cold ablution, and the interposition of a piece of lint between the prepuce and the glans penis. In like manner another species, *Herpes circinatus*, the vesicular ringworm, is liable, when it appears upon the hairy scalp, to be mistaken for that pest of schools and of school-boys, the *favus confertus*, or *porrigo scutulata* of Willan, the common scald head; a complaint which is naturally shunned as filthy, stubborn, and contagious. *Herpes iris* is a mere curiosity. In this species each group of vesicles is surrounded by four concentric erythematous rings, of different shades of colour. The rings form and fade in succession, one after another, by a slight extension of the inflammation, each time. The spots constituting the eruption have been likened to small parti-coloured cockades. But the most singular species of all is the *Herpes zoster*, in which the separate patches lie in the direction of a band that encircles half the circumference of the body. Hence its names, *zoster*, *zona*, *zona ignea*, and in our vernacular tongue, *the shingles*; and even this Dr. Johnson derives from the Latin, *cingulum*, a girdle.

Most commonly the zone is confined to the trunk of the body, has a somewhat oblique direction, like a sword-belt, and occupies exactly one-half of the circle, lying between the linea alba and the spine on one side only. Sometimes, however, it extends from the trunk to the limbs. Thus it may begin in the loins, pass obliquely across the flank, and terminate at the inner part of the thigh. Or it may commence from the upper part of the spine, cross the shoulder, and end on the arm or forearm. In the year 1833 I saw a lady affected with this strange eruption, in whom the clusters of vesicles began near the spine in the neck, passed over the scapula, then to the shoulder and axilla, whence the main line ran along the outer side of the upper arm till it reached the elbow, where it turned inwards, followed the inner side of the forearm, went across the palm of the hand, and terminated by two or three patches upon the palmar and inner side of the ring finger. Very rarely indeed it appears on the limbs only. Once I have seen it limited to the thigh and leg, where it corresponded to the course of the sciatic nerve. Once I have known it spread from the neck, behind, up into the hairy scalp. The most common situation of the demicincture is across the base of the thorax. It is a curious feature of this curious disorder, that, in nineteen cases out of twenty, according to Biett, it occupies the *right* half of the body. Of this singular preference of the right side, if indeed it be a general fact,

I can give you no explanation. I have seen fifteen cases of the complaint since I began to attend to that circumstance, and in ten of these the eruption was on the right side. Rayer, in the first edition of his book, said that eight cases in ten would be found to be on that side; but a longer experience has reduced that proportion. Of fifty-three examples seen by himself, thirty-seven only were on the right, and sixteen on the left. Reil states that he has *always* observed it on the left half of the body; and Mehlis, among twenty-five patients, counted sixteen in whom the left side was affected. This statistical point remains, therefore, to be settled, if it be worth settling, by a larger induction of particular cases. The zone seldom transgresses the median line at either extremity, unless perhaps the redness of the extreme patches may extend a few lines farther. It is said, however, in some exceedingly rare instances, to complete the circuit of the body. There is a vulgar but erroneous notion, that the eruption proves fatal when it thus surrounds the whole of the trunk; and this notion is as old as the time of Pliny, who says, "*Zoster appellatur, et enecat si cinxerit.*"

The most important, because the most distressful, of the symptoms, is an intense darting pain, described by the patients as being deep-seated, very acute, and shooting through the chest. Fortunately, however, this is by no means a common incident. I have met with it in two or three cases only. Sometimes the pain precedes the eruption; more often it accompanies it; and it is apt to last, in spite of remedies, for some time after the eruption has disappeared. Mr. North tells me that, in a female patient of his, this pain continued to be severe and intractable for eighteen weeks. That this is a rare complication of the disorder we gather from the experience of M. Biett, who never once witnessed this symptom in more than 500 cases of shingles. The severe and intermittent character of the pain, and the peculiar direction of the row of herpetic patches, lead to the belief that the whole malady may arise from some fault in the nervous system. Of its causes we have no certain knowledge. It is said to attack young persons more especially, and those who have fine and delicate skins, and the male more frequently than the female sex. But I suspect that these assertions rest on a very loose foundation. Of the fifteen cases already mentioned, ten occurred in females. One of the patients was a child two years and seven months old; another was an aged man of about 75. In several instances I have found, upon enquiry, that the patients, being children, were in the nightly habit of wetting their beds. Whether this has been any thing more than a casual coincidence, I do not

know ; but my attention was first directed that way, some years ago, by Mr. Wheeler, the apothecary at St. Bartholomew's Hospital, who told me that he had often noticed the same circumstance. According to Bateman, the disorder "seems occasionally to arise from exposure to cold after violent exercise. Sometimes it has appeared critical, when supervening to bowel complaints. Like erysipelas, it has been ascribed by some authors to paroxysms of anger." Schwartz saw three cases which followed violent fits of passion ; and Plenck affirms that he had known it occur twice after furious anger—and a copious potation of beer.

The duration of the eruption is from ten days to a fortnight ; but it is liable to be considerably prolonged by troublesome ulceration, whenever the vesicles and crusts are prematurely chafed off by friction or pressure.

Very little, as you must perceive, can be done, or is requisite, in the way of treatment. The patient is to be cautioned against rubbing off the heads of the vesicles. Attention should of course be paid to the state of the stomach and bowels ; and the diet should be regulated. Our main business is to look on, and to endeavour to set right whatever may be manifestly wrong.

Should the eruption be attended or followed by the intense shooting pain which sometimes, but not often, harasses the patient, it will be right to apply opiates, by friction, over the affected region. I would use the aconitine ointment in such a case. Warm baths will also be proper ; and as the pain is probably neuralgic, the carbonate of iron is a remedy which ought to be tried.

*Eczema* is another genus of the vesicular class of diseases. It is characterized, in its commencement, by an eruption of very minute vesicles, scarcely prominent, closely crowded together, and requiring a microscope sometimes to render them distinctly visible. They terminate either by the reabsorption of the fluid they contain, or by the formation of superficial moist excoriations. *Eczema* is not contagious.

There are several species or varieties of this form of cutaneous disorder also. It is sometimes produced by great heat, and particularly by the heat of the sun ; and this is named *eczema solare*, *heat-spot* : sometimes by the contact of irritating substances with the skin, as in what is vulgarly called the grocer's itch, affecting the hands of those who are much conversant with sugar. *Eczema* often occurs upon the scalp, and constitutes I believe the most frequent form of what is vaguely called scald head, *porrigo*, or *tinea capitis*. But the most severe of all its species is that which has received the names of *Hydrargyrium*, *erythema mercuriale*, and *eczema rubrum mercuriale*. This

as these names imply, is an occasional consequence of mercury ; an unusual consequence, no doubt, and one that happens only in a few peculiar constitutions : but you ought to know it, in case it should follow the use of mercury prescribed by yourselves.

The eruption begins usually in the groins and upon the thighs. It is at first red, and is accompanied by much heat and itching. It soon extends, in the severer cases, over the whole body ; and an innumerable multitude of very minute glittering vesicles may be seen, with the aid of a magnifying-glass, from the beginning. Like that of erysipelas, the eruption is attended with a good deal of swelling. The intumescence of the face is such as to close up the eyes : and the disorder becomes febrile, in its course ; for there is seldom much fever at the onset. The vesicles increase in size, turn milky, burst, and pour forth an acrid exudation, that irritates and inflames the skin with which it comes in contact, and thus increases the local complaint. The distress and worry occasioned to the patient by the foetid smell of the discharge, by the stiffening which it causes of his body linen, and by the heat and itching, are, I conceive, the main causes of the febrile disturbance. The discharged matter is apt to become thick and hard, and to present the appearance of large scabs : and in this state the nature of the disease may very easily be misunderstood, it being impossible to say, when it is seen for the first time under these circumstances, whether it was originally vesicular or not.

The duration of this harassing distemper is variable. It may be over in a fortnight, or it may last several weeks. It terminates by a cessation of the discharge, and then the cuticle detaches itself in large flakes. Sometimes in this disease also the epidermis falls entire from the hand, like a glove.

Without being dangerous to life, this disease is apt to be obstinate. It is not much within the control of remedies. What little can be done is chiefly palliative. The mildest local applications must be used : tepid water, barley water, strained gruel. The warm bath, when circumstances permit. Poultices are sometimes of much service, in preventing the hardening of the matter that exudes, and so obviating one source of irritation. Flour, or powdered charcoal, may be sprinkled over the eruption in the slighter and early cases, for the purpose of absorbing the discharge. Equal parts of olive oil and lime water make a soothing liniment, which may be applied by means of a feather. The local remedies may fairly be varied, for sometimes one, and sometimes another, is found to give relief. The patient's linen must be frequently changed, especially whenever it becomes stiff and hard with the exudation.

With respect to the general treatment, opiates, to procure rest, and to allay irritation, are probably indispensable. The bowels must be kept moderately open, but no severe purging should be employed, for the patient must at all events undergo a long and weakening process, and therefore it must be our care that the *treatment* be as little weakening as possible. In protracted cases, where there is much exhaustion, wine may with propriety be given; and, almost always, good strong broths. As the disorder declines, some of the reputed tonics may be prescribed; the mineral acids, quina, sarsaparilla.

I need not say that, in such cases, you must be scrupulous in seeing that no more mercury is administered or applied.

A separate class of cutaneous diseases, very analogous, however, to that which we have been describing, is the class of *bullæ*, or blebs. Anatomically speaking there is but little difference between the two: *bullæ* are *large vesicles*. When the eruption is at its height, it is composed of hemispherical prominences of various sizes, from that of a pea to that of a hen's egg, and having the shape and appearance of the bubbles raised in a pool of water by a hard shower of rain. They are formed by the effusion of a serous, or a sero-puriform fluid, between the true skin and the cuticle. You can only be sure of the diagnosis when you see the eruption in this stage of its progress.

The best example of this class is that which is called by some writers *Pemphigus*, by others *Pompholix*.

It is characterized by the presence of *bullæ*, varying in their magnitude, commonly distinct but numerous, springing up in successive crops, on one or more parts of the surface. At first these *bullæ* are nearly transparent, and contain a thin limpid serum; but they become gradually opaque, and acquire a reddish tinge.

*Pemphigus* has been described as being sometimes acute, sometimes chronic. The acute form is attended with smart fever, the *bullæ* rise spontaneously or in quick succession, run their course, and disappear; and then the disease is over. This is a very rare form. In general the *bullæ* continue to come out; the complaint is spread over weeks, or months, or years; and it is accompanied by little or no febrile reaction. This, on the other hand, is a common form of disease. It is the *pompholix distinus* of Willan and Bateman. The eruption often occupies all parts of the body at the same time, or in succession; in other cases it is confined to a limited space. I have most frequently seen it on the forearms and legs. When the *bullæ* are very numerous, they may give rise to some febrile symp-

toms, but not else. The complaint may be indefinitely prolonged by successive crops.

The eruption begins in small red points, the formation of which is attended with a slight pricking sensation. Some patients have likened this sensation to that which accompanies the passage of the electric spark. In the centre of each of these spots, the cuticle becomes lifted, while the circumference of the spot enlarges, so that *bullæ* are rapidly formed, often in the space of a few hours only, as big as a hazel nut, or a walnut: or the blebs may even be much greater than that. Either in consequence of their distension, or of the pressure made upon them by the movements of the patient, some of these *bullæ* burst, and a straw-coloured serum exudes. Then the epidermis collapses into folds and wrinkles; or if it be detached at a part of the margin of the *bullæ*, it is rolled back, so as to expose a portion of the red, painful, and smarting surface beneath it. Towards the third or fourth day, when the *bullæ* lose their transparency, and the liquid they contain becomes reddish, those *bullæ* which have not been broken sink down and wither; the cuticle is no longer stretched; but, sodden by the serous fluid, it assumes a whitish hue, becomes opaque, and forms at length small brownish flat crusts, of no great thickness.

In the meantime fresh *bullæ* appear by the side of the former ones, and pursue the same course; so that generally you may see in the same person, tense *bullæ* containing a transparent and yellowish serum; thin crusts; and irregular red patches of various size, slightly excoriated.

This is the ordinary course of chronic *pemphigus*: and I say it may thus go on for months or years.

The disease is most frequently observed in persons of debilitated habits. It is sometimes apparently the result of intemperance; or of the use of bad or insufficient food. In Bielt's experience it has often been coincident with the fatty liver. When the disorder is chronic and uncomplicated, the treatment found useful is such as we might expect benefit from, knowing the constitutions in which the disease is most apt to occur, and the causes which seem at least to favour its occurrence, if they do not produce it: regulation of the bowels; good nourishing food; and tonic medicines, bitters, and especially quina and the mineral acids. Bielt describes this kind of treatment to have been very successful in St. Louis; and that not only in old and worn-out subjects, but also in the young, especially when the complaint has been chronic. Bateman recommends the same general plan.

Local applications have seldom been much employed, except some mild ointment to the excoriated parts. Bielt advises emollient



lotions, or even opiate washes when much irritation exists; but a case recorded in the *MEDICAL GAZETTE*, by Dr. Graves, of Dublin, affords a remarkable instance of a cure by local applications alone: and it is a case worth recollecting, although, as he justly remarks, we ought not to generalize from a single instance.

His patient was a boy, 14 years old, of slender frame and delicate constitution, yet enjoying uninterrupted health, except the cutaneous disease, which had lasted five years. During that time the succession of bullæ had seldom ceased. The bullæ were very numerous, occupying not merely the face and extremities, but the trunk also; and they were in various stages of their progress, some healing after having burst, some of a larger size and unbroken, others small, and recent.

Dr. Graves observes, that from the descriptions of Bateman, and of Bielt, and though both authors describe the disease correctly, we should scarcely form a notion of the occasional severity of this disorder. He had seen two examples of it in young men, where the irritation and suffering produced by the constant exposure of large portions of skin denuded of epidermis, had operated most unfavourably on the general health, almost banishing sleep, and reducing the patients to a state of great debility. These cases did not yield to the method of treatment recommended by authors; and, therefore, Dr. Graves determined, whenever another opportunity should occur, to have recourse to a new plan.

In the boy in question, therefore, he had all the bullæ opened with a lancet, and the denuded surface of the corium was then touched with a stick of lunar caustic. The nitrate of silver was also applied to the skin around each bulla, for the breadth of a line; and the recent pimples, which indicated the formation of future bullæ, were all treated in the same way. The boy was then washed, and supplied with clean linen.

This single application of the nitrate of silver had not merely the effect of entirely destroying the morbid actions in the portions of the skin which were at the time affected, but (what was very remarkable) no fresh bullæ made their appearance afterwards: none at least had appeared for four months, when he wrote his account. The only part where a repetition of the process was required, was the palm of the hand, where the thickness of the cuticle rendered it more difficult to expose the diseased surface of the cutis to the full action of the caustic.

It might strike you from this cure of a long standing disorder, so readily, by mere local means, that the disease propagated itself from one part of the surface to another, by a sort of re-inoculation. But it has been

fully proved that the disease is not contagious. A Mr. Gaitskill engrafted himself, with impunity, with the fluid; and analyzed it, and found it apparently like the thin serum of hydrocephalus. Dr. Graves, therefore, supposes that the cure was owing to the simultaneous destruction of all the parts of the skin that were in a state of morbid action: a morbid action which would have been otherwise propagated to other portions of the surface, by what is called the sympathy of *continuity*.

The class of scaly eruptions—the *squamæ*—is distinguished by the occurrence of red spots or blotches, upon which laminæ of altered cuticle form, and are thrown off, and constantly renewed. You will perceive that, anatomically, this class of cutaneous disorders has a close analogy with the rashes; and yet it is separated from them by very obvious particulars. In the exanthemata of Willan and Bateman, the redness is *followed* by desquamation; in the *squamæ* these two appearances coexist: in the exanthemata the sequence of redness and desquamation takes place, in general, once only; in the *squamæ* the morbid cuticle continues for an indefinite time to scale off again and again in successive fragments from the abiding red patch of skin.

Lepra, psoriasis, and pityriasis, and some syphilitic eruptions, constitute the principal of the squamous affections.

Lepra is a very common disorder of this class; hence its name, *lepra vulgaris*. It consists in red scaly patches, of various dimensions, but always affecting a circular or elliptical shape, and scattered over different parts of the body. It commonly begins on the limbs, most usually near the joints; just below the knees, or the elbows; and Dr. William Budd has pointed out the curious fact that these patches, especially when they are few, and the disease is recent, are distributed symmetrically, each spot on the one limb answering in situation to a similar spot on the fellow limb. This shows that the disease is a blood disease; that it depends upon some poison, introduced from without, or, more probably, bred within the body. By degrees the patches both enlarge in size, and multiply in number, and extend along the extremities to the trunk. The eruption is seldom seen upon the hairy scalp, or upon the hands. As the patches enlarge they sometimes become confluent; but even then, the outline of the confluent scaly space is defined by arcs of circles, and the disorder is sufficiently distinguishable from *psoriasis*. It is not easy to set these things before you in mere verbal description. To have *seen* lepra once, is to know it for ever.

When the patches begin to get well, the

restoration of the altered surface to its natural condition and appearance commences in the centre—i. e. in the spot first affected—and proceeds outwardly towards the circumference: so that the scaly redness assumes a ring-like arrangement. This ring becomes gradually narrower and narrower; at length its continuity is here and there broken; and at last it vanishes entirely.

The eruption does not, however, run any definite course. Sometimes it goes rapidly through its phases; in other cases it persists for a very long period. It is not at all contagious.

Neither is lepra attended, in general, with much local inconvenience, nor with much constitutional disturbance. When the eruption is very copious and extensive, and especially when it is plentiful or almost continuous around the larger joints, it renders the movements of the limbs stiff and difficult; and even sometimes painful, from the cracking of the inflamed surface as it is stretched in the bending of the joint.

But I have seldom found lepra to exist *unconnected* with some disorder of the digestive organs. Usually the connexion is that of alternation, and not of coexistence. The patient is dyspeptic till the eruption comes out, and then the dyspepsia is relieved; and it often returns as the leprous patches disappear. The eruption is the more unsightly; the dyspepsia is the more troublesome. This alternation would seem to mark the shifting location of the *materies morbi*.

When the patches are small, and chronic, and white, that variety is no longer called lepra vulgaris, but lepra *alphoides* and there certainly is another distinct variety, of a more blue, or livid, or copper colour than the ordinary, and a result of the poison of syphilis. It is named accordingly syphilitic lepra. This species will get well under the influence of mercury; which, so far as my observations go, does not cure the others.

*Psoriasis* is closely allied to lepra. When it occurs in distinct patches it is often difficult to say to which genus the eruption belongs. In general the patches of psoriasis are not so broad as those of lepra; their edges are less raised, and their centres less depressed; the scales adhere more firmly; and the patches are less uniform and less circular.

But, psoriasis frequently spreads itself over large portions of the skin, and it may come to occupy nearly the whole surface of the body. It is then called psoriasis *diffusa*. It often renders the patient hideous to look at. The scaly encrustation is interspersed with chaps, furrowing the skin in all directions, and following particularly its natural folds and angles. These cracks, when the skin is put upon the stretch by the move-

ments of the patient, are apt to bleed. In these severer cases (which are said to be examples of psoriasis *inveterata*) the laminae of altered cuticle are thick, and very abundant. They fall off perpetually, or are rubbed off, and may be shaken from the patient's clothes, or collected in handfuls from his bed.

Both these scaly disorders, lepra and psoriasis, require the same kind of treatment.

I believe that external applications are of but little use. I have tried a good many, and have lost all confidence in them, with the exception of the warm bath. Whatever tends to improve the general health, will hasten the departure of these eruptions. I believe that they sometimes depend upon the presence, or the generation, of an excess of acid in the system; and that they are often to be cured by alkaline remedies I am sure. I have seen many cases of psoriasis rapidly improve, and get ultimately well, under full doses of the *liquor potassae*; from half a drachm to a drachm, three or four times daily, in a glass of milk, or of water, or of beer. Another internal remedy from which I have seen manifest improvement result, is arsenic; given with the cautions, and in the doses, which I have more than once spoken of. These are the two remedies of which I have the most experience; but neither of them is infallible; and you will have to try many things in succession, for patients are very desirous of getting rid of the disfiguring eruption, even when it does not interfere with their health or comfort. Now the Harrogate waters, a strong decoction of dulcamara, pitch-pills (and if pitch-pills, I should suppose *à fortiori* creasote), tincture of cantharides, and the iodide of potassium, are remedies of some renown for these scaly diseases. Of the syphilitic lepra I repeat that mercury will prove a cure. In all cases the diet must be regulated, and all kinds of stimulating food abstained from. Dr. Bateman knew a man who was always attacked with lepra if he took spices with his food, or drank ardent spirits: and a patient of my own got rid of long-standing and very troublesome psoriasis of the scrotum, upon adopting, for other reasons, a very abstemious and simple mode of living.

Among the *pustular* diseases of the skin there is one which assumes many forms, and is termed *impetigo*. Whatever may be the minuter peculiarities of this eruption, its general characters are the following. It consists of crops of pustules, sometimes scattered irregularly, sometimes collected into groups. The pustules burst, or are broken, dry up, and scab over. The crusts are yellowish, and very friable, and resemble in appearance little masses of candied honey;

or sometimes they look like small pieces of dirty plaster. From beneath these crusts a considerable discharge continues to take place; the crusts become thicker and larger, and around the margins the skin is red and raw, as it is also beneath them.

We have, I say, various forms of this complaint; *impetigo figurata*, *impetigo sparsa*, &c. It often borders closely on eczema, so that authors describe an eczema *impetiginodes*, or an *impetigo eczematodes*. These varieties are delineated by Rayer, by Willan, and Bateman, and by others; and knowing their characters, you can examine and study their appearances for yourselves. Impetigo is a non-contagious disorder.

Sometimes this complaint occurs in an acute form, and is attended with fever. In such cases its removal will be accelerated by bleeding the patient; and the blood drawn will be found to present the buffy coat. Whatever local applications are made should not be unctuous. It is seldom that impetigo will bear, or be the better for ointments. Purgatives and alkalines internally, and very weak spirit or alkaline lotions externally, with a scrupulous diet, constitute, I believe, its best treatment. When the complaint is chronic, and the discharge copious, the oxide of zinc has often a very beneficial effect. It may be dusted over the affected surface, from a thin muslin bag; or it may be applied in the shape of a lotion—fifteen grains to an ounce of rose water. You will find this a most useful lotion for that disfiguring impetiginous eruption which sometimes covers the face of children like a mask, and is called *crusta lactea*. The phrase *crusta lactea* is, however, very loosely employed by medical men.

There is a very common, and a very teasing pustular disease of the skin, usually called a *boil*, in some parts of England a *pussh*, and by the learned *furunculus*.

First there is a slight degree and extent of hardness to be felt, a tender knot, just beneath the surface, which soon begins to look red, and a small swelling arises, which gradually increases up to a certain size, that of a large pea, or of a hazel nut, or of a walnut. The tumor is painful, and undergoes a process of slow suppuration. Some time from the 4th to the 8th day it acquires a conical or pointed form, and its apex becomes of a white or yellow colour. At last the cuticle gives way, and the patient begins to congratulate himself that the little abscess is ripe, and that his troubles are nearly over. But he is disappointed; an insignificant quantity of pus mixed with blood escapes, and leaves visible a mass of dead cellular tissue—a core as it is called—of greater diameter than the opening, which is commonly small. At last, two or three days perhaps after this, the slough is expelled, in company with more

pus, and a deep cup-like cavity remains, which soon however fills up, and the boil is really over.

These little phlegmons frequent the buttocks, the thighs, the arm-pits, the nape of the neck, the abdomen. They may occur almost anywhere. They are apt to come in crops, or in a series: and any kind of irritation suffices to cause them when a constitutional tendency to their formation exists. I have known a piece of soap plaster applied to the skin give occasion to a long succession of boils. Poultices, applied to promote the suppuration of any existing furunculus, are believed, by their warmth, to encourage the growth of others around it. In truth, these phlegmons belong primarily and essentially to the subcutaneous cellular tissue rather than to the skin. Dr. Prout corroborates the statement of Cheselden that they are often accompanied by a saccharine condition of the urine. You know probably that, in Dr. Prout's theory of assimilation, the cellular tissue represents the saccharine aliment.

The individual boils are intractable; the state of system which engenders them may perhaps be corrected. Some dab them, when nascent, with a solution of corrosive sublimate in spirit; some support them with sticking plaster; others apply poultices; and others again cut the hard tumor through while it is yet crude. Do what you will, you will seldom prevent or accelerate their deliberate course; but I believe that by applying leeches, or cold, you may prolong, though you cannot arrest that course.

Sarsaparilla, and the liquor potassæ; and where the system is below par, the sulphate of quina and a generous diet, are found useful. Sugar, and saccharine food of all kinds, should be scrupulously avoided.

Carbuncle, *alias* anthrax, is a gigantic boil; but it is far more serious than the common furuncle, not only in respect to its magnitude, and to the amount of suffering which it occasions, but also on account of the constitutional vice that it betokens. A carbuncle is a large, flat, circumscribed, very hard, and very painful tumor, of a purplish red colour, and attended with a sensation of burning heat. Its ultimate diameter may be three or four inches, or more. It ends in the formation of a deep slough, of more than corresponding dimensions, and the destruction of the skin above it. A number of pinhole openings at length present themselves, on the dark red surface, and disclose the immense core beneath.

This serious complaint occurs chiefly in advanced life, in corpulent males, and in persons who have lived fully. It is frequently attended with diabetes. The tumor is more often situated upon the nape of the neck, or between the shoulders, than elsewhere. It produces high constitutional disturbance and

irritation. Surgeons are in the habit of dividing the firm mass into quarters, by deep crucial incisions. This is a sharp remedy, but it purchases speedy ease, by removing that tension of the inflamed parts whereupon the pain chiefly depends. I am persuaded, however, that this severe operation is done too indiscriminately. If the tension be not manifest, and there is not much complaint of pain, you had better, in my opinion, leave these tumors to the care of nature, and address your remedies to the system at large. Support is often needed; and opiates are sometimes indispensable; and the bowels must be kept clear by purgatives.

I shall not attempt to discuss, even in this cursory and disjointed manner, any more of the inflammatory affections of the skin, whether acute or chronic: but I wish, before I conclude, to direct your attention to a peculiar morbid condition, of much greater interest and consequence than most of those which I have just been describing. I mean the malady which is best known by the appellation of *purpura*, or the purples, and which usually, though it must be confessed very incorrectly, is ranked among cutaneous disorders. It is strictly a hæmorrhage. Its external phenomena are so obvious, and so well known, that I need not dwell upon them. Small round spots appear on various parts of the surface, generally upon the legs first and most plentifully, of a dull red, or of a deep purple colour. They are accompanied by no local pain, by no sensation of any kind. Pressure upon them does not efface the colour, nor render it fainter, as it does in inflammatory spots of the skin. There is scarcely ever any prominence of the purple stigmata; but they are sometimes intermixed with livid blotches, with appearances exactly resembling bruises: and both the circular spots and the ill defined vibices undergo, before they disappear, the same changes of colour, from red to a greenish yellow, which a bruise undergoes. In fact the anatomical condition of a bruise is exactly the same with the condition of the diffused livid blotches of *purpura*. In each case the colour is the result of ecchymosis. With all this, passive hæmorrhages from various parts, and particularly from the mucous membranes, are common.

It is clear, therefore, that this complaint cannot be regarded as a cutaneous complaint, even in the loose sense in which that epithet is sometimes applied to affections that are really *beneath* the skin, but visible *through* it. The hæmorrhage takes the form of red or purple spots when the quantity of blood extravasated in the same place is only a drop. And the spots are not peculiar to the skin, nor to the subcutaneous tissues, but are found, occasionally, upon all the internal

surfaces also, and within the substance of the several viscera. I have seen these purple spots on the mucous surface of the mouth, the throat, the stomach, and the intestines, on the pleuræ and pericardium in the chest, on the peritoneal investment of the abdominal organs, in the substance of the muscles, and even upon the membranes of the brain, and in the sheaths of the larger nerves: and I have known them to be accompanied with large extravasations of blood in most of the vital organs of the body.

The superficial markings of *purpura*, the red and purple spots and livid blotches, exactly resemble the spots and bruise-like stains which characterize sea scurvy: and I confess that I formerly regarded the two affections as being identical, or as mere varieties of the same disorder. But it is not so. For a very full and interesting account of scurvy, I must refer you to an essay, by Dr. Budd, in the Library of Practical Medicine. He has there collected from various sources, and exhibited in a clear light, convincing evidence that scurvy is caused—neither by contagion, nor by cold weather, nor by impurity of the air, nor by the continued use of salt provisions, all of which have been alleged as sources of the disease, but—by the privation, for a considerable length of time, of fresh succulent vegetables. Now *purpura* often makes its appearance when there has been no deficiency of such food, and no remarkable abstinence from it. Scurvy is most common in winter, or the beginning of spring; *purpura* in the fruit seasons, in summer and autumn. In scurvy the gums are uniformly soft, and swelled, and spongy, and bleed readily; this is no necessary feature in *purpura*. Scurvy is marked by extreme debility and dejection of spirits; it is always rendered worse by blood-letting and by mercury; and it is infallibly and rapidly cured by the administration of lemon-juice, or of other fresh fruits and vegetables. *Purpura*, on the other hand, often requires venesection for its cure; is not constantly nor surely, if ever, benefited by the antiscorbutic juices; is not always attended by sponginess of the gums, nor by feebleness of the mind and body; and I have seen it clear speedily away upon the super-vention of mercurial salivation, and hyper-catharsis.

Lemon-juice is really a specific against scurvy, whether it be employed as a preventive or as a remedy. It supplies something to the blood which is essential to its healthy properties. Its virtues were known in this country full two hundred years ago, as appears by the work entitled "The Surgeon's Mate, or Military and Domestic Medicine, by John Woodall, Master in Surgery. London, 1636." But the merit of making the fact generally known, and

of procuring the systematic introduction of lemon-juice into nautical diet, by an order from the Admiralty, is due to Dr. Blair and Sir Gilbert Blane, in their capacity of Commissioners of the Board for sick and wounded seamen, in 1795. "The effect (says Sir John Herschel) of this wise measure may be estimated from the following facts. In 1780 the number of cases of scurvy received into Haslar Hospital was 1457: in 1806 *one* only, and in 1807 *one*." He adds, "There are now many surgeons in the navy who have never seen the disease."

Dr. Budd, however, has assured me that the Dreadnought Hospital-ship, at Greenwich, is often full of cases of scurvy; most of the patients so affected having just arrived in *merchant ships*, from a long voyage. This surely ought not to be. It *could* not be if the owners of those vessels knew how easily, surely, and cheaply, this truly dreadful disorder may be prevented.

The same causes which give rise to sea scurvy will produce precisely the same effect on land. Of this I must give you one illustration from my own case-book. In August 1830 I admitted into the Middlesex Hospital a blacksmith, 35 years old, covered with round purple spots of various sizes, and with irregular blotches of ecchymosis. He had *vomited* blood on the preceding day. He was continually *coughing up* blood at the time of his admission, and his wife estimated the whole quantity that he had then lost to be more than half a pailful. The interior of his mouth and palate was pouring forth blood from a number of livid fungous tumours, formed by the extravasation of blood into the cellular tissue beneath the membrane, and the subsequent rupture of that membrane. He was passing blood by the *bowels* also; and his *urine* was loaded with blood.

Here were the *symptoms* of scurvy strongly marked. In the man's history we could trace its peculiar *cause*. He had long been subsisting on very poor and insufficient nutriment, seldom eating any meat, but living almost entirely on tea, coffee, and bread and butter. He had been too ill and weak to work regularly, yet he had been obliged occasionally to overexert himself to obtain a scanty supply of food for himself, his wife, and a large family of children. He had been a settled dram drinker, but for some time had taken much less of that stimulus; merely because he had not the means of procuring it. His pulse was frequent and feeble.

I had not much hope that this patient could be saved by any treatment. He was immediately put upon a diet of roast meat, and began to take daily half a pint of fresh lemon-juice diluted with a pint and a half of water. This plan, with some tonic medicine,

was commenced on the 3d of August. He improved at once. On the 8th all hæmorrhage had ceased; the fungous tumors in the mouth had disappeared, leaving small scars in the places they had occupied; and the discolouration of the skin was almost gone. The amendment was so striking and rapid, and so immediately consequent upon the institution of the treatment, that no room was left for mistaking recovery for cure.

It is chiefly by investigating the previous history of the patient, and by noting the degree of strength that he possesses, and the condition of his pulse, that we are guided in our diagnosis of ambiguous cases. The late Dr. Parry, of Bath, was one of the first to point out the efficacy of abstinence, venesection, and purgatives, in some instances, at least, of purpura. I may refer you to an example of this kind detailed in the *MEDICAL GAZETTE* for the 5th of April, 1828. It occurred in one of Dr. Latham's hospital patients; and several of the symptoms were very like those I have just been relating. In particular the whole tongue was livid, one half of it presenting the appearance of a large, black, bleeding fungus; and on the inner surface of each cheek were several black fungoid patches. The patient was voiding also unmixed blood from the bowels. In this case there was no evidence of the operation of any debilitating cause, and the pulse, though frequent, was *hard*. Bleeding from the arm always gave relief to his uneasy sensations: he was purged also, and put upon low diet. Under this plan he steadily improved, and in four or five days no vestige of the complaint remained except the fading spots. For some time afterwards, however, "the frequent use of active purgatives, and a rigid restriction to low diet, were necessary to obviate costiveness, and to keep down the circulation, which had a tendency to become over active."

You are not to suppose that all cases of purpura bear this sthenic character, or require these heroic remedies. Your treatment must be guided by the previous circumstances and habits of the patient, by the state of his pulse, and by the other symptoms which accompany the purple spots. And when you are in doubt what plan to pursue, make a cautious tentative bleeding. Take away a couple of ounces at a time, into a wine-glass, note carefully the appearance of the blood itself, and the effect of the blood-letting upon the patient; and then go on more boldly, or abstain thenceforth altogether from the lancet, according to circumstances. In many cases your chief reliance will be placed in the watchful employment of purgatives. These have been strongly recommended by Dr. Harty, of Dublin, as having proved eminently successful in his practice.



The late Dr. Whitlock Nicholl, and others, have spoken in terms of strong praise of the oil of turpentine, administered in moderate and repeated doses, as a remedy in purpura.

I have adverted to one peculiar source of danger in purpura, the hazard that blood may be effused in some vital organ where even a slight amount of hæmorrhage suffices to extinguish life. Dr. Bateman states that he had seen three instances in which persons were carried off, while affected with purpura, by hæmorrhage into the lungs. During the course of one week, in the year 1825, I was present at two inspections in the dead-house of St. Bartholomew's Hospital, illustrative of the same point in respect to another vital organ, and involving a question in forensic medicine. The subjects of examination were both of them women of middle age, who had been brought into the hospital covered with purple spots and bruise-like discolorations, and suffering hæmorrhage from the mucous membranes. Each of these women declared that the apparent bruises were marks of beatings received from her husband. One of them became suddenly hemiplegic a little while before she died. Of the manner of dissolution in the other case I am not sure. In both instances a considerable quantity of blood was spread over the surface of the brain, between its membranes; and in one of them blood had been shed also into the cerebral substance, which it had extensively lacerated.

It may be worth mentioning that in one of these corpses there were indications, either of unusually rapid putrefaction after death, or (what I think more probable) of some degree of decomposition even before life was extinct. This woman died in the evening, and the body was examined the next day, twelve or fourteen hours afterwards. A quantity of foetid gas escaped from the cavity of the abdomen as soon as it was opened, and small bubbles of air were seen to ooze from the cellular tissue of various parts of the body. Even when incisions were made into the *liver*, air frothed up, as it might do, under ordinary circumstances, from a section of the lungs.

I have no time left for discussing the pathology of these complaints. They are eminently *blood-diseases*. In scurvy the blood is starved of some essential ingredient, which the juice of lemons, and other fresh succulent vegetables, readily supplies and renews. When drawn from a vein the blood is often visibly unnatural. A very small quantity was taken, before I saw him, from the arm of the blacksmith whose case I just now mentioned. After standing for some time, it continued to fill the whole area of the vessel in which it had been received,

without any apparent contraction, or separation of serum. On its flat upper surface was a thick, grey, semitransparent jelly, and beneath this there was, strictly speaking, no coagulum, but a black semifluid substance of the consistence of syrup. Huxham describes similar appearances. "The blood of such persons (says he) when it hath been drawn off, always appears a mere gore, as it were, not separating into crassamentum and serum as usual, but remaining in a uniform half coagulated mass, generally of a livid or darker colour than usual, though sometimes it continues long very florid; but it always putrefies very soon." In another place, when describing a particular case, he says, "I found that neither of the portions of the blood that had been drawn had separated into serum and crassamentum as usual, though it had stood many hours; but continued, as it were, half coagulated, and of a bluish livid colour on the top. It was most easily divided on the slightest touch, and seemed a purulent sanies rather than blood, with a kind of sooty powder at bottom."

Dr. Budd, however, states that in some cases of scurvy the separation of blood into serum and clot is as perfect, and takes place as readily, as in healthy blood.

When you recognize the disease as genuine scurvy, and trace a previous abstinence, whether forced or voluntary, from fresh vegetables, the treatment is plain; you must supply the kind of nutriment which has been defective, and support your patient's strength in such other ways as the circumstances of the case may dictate.

And here, gentlemen, I must needs stop. Here ends my course. And if this were all I had to say, I should say it with something like glee, and you, no less than myself, would rejoice that at length a breathing-space and holiday had arrived. But I cannot feel so when I add that this is the last lecture, not of this course merely, but the last of any kind, that I am ever likely to deliver in King's College. I cannot say this without concern and regret.

I am quite aware that my lectures have been in many respects imperfect. They have been very unequal to my own wishes. But they have been as full, and as carefully weighed, as my broken leisure, and irregular opportunities, and slender ability, would permit. I can only hope that at any rate I have not misled you. If I have been intelligible, if I have drawn such a sketch of a great and difficult subject as may help you in studying it for yourselves, I have achieved my task. I told you, in the outset, that I could not here teach you the *practice* of physic, but only its *principles*. It would be idle for me to speculate farther upon the success of my co-

deavours. You are the judges of that matter. Whatever rules and precepts I have laid down, you will soon test by your own experience, and adopt or reject them accordingly. The well-known maxims of Bacon apply with especial truth to medical instructors and their pupils. "*Etsi non displiceat regula, oportet discentem credere; huic tamen conjungendum est, oportet jam edoctum judicio suo uti; discipuli enim debent magistris temporariam solum fidem, judicii suspensionem, donec penitus imbiberint artes: non autem plenam libertatis ejurationem, perpetuamque ingenii servitutem.*"

Retiring reluctantly from this place in obedience to the force of circumstances, there are yet many things to comfort and console me. It is a great satisfaction to reflect that I have never had any serious disagreement with yourselves; have never received any but the most respectful and kind treatment either from my present or from any preceding class. I have reason to thank you—and I do thank you—for the courtesy and attention you have at all times shown me. It is a source of gratification also that I carry with me the good will, as I believe, of my excellent colleagues; and that I go without having forfeited any of that confidence which the Council first reposed in me as their servant, when they offered me without solicitation the chair I now resign.

Had I been a few years younger, unembarrassed by previous official engagements, and somewhat more at leisure than I am, I should have been glad and proud to have attached myself to the new hospital, and to have laboured still in the cause of King's College, and of its medical school. But it is otherwise ordered: and I will mention, as the last source of consolation in taking leave of you, my conviction that to you my loss (if without presumption I may so venture to speak of my resignation) will be more than supplied by my successor. I know that gentleman well. I know, indeed the world knows, his talents. He was highly distinguished in the Senate House at Cambridge. He has since devoted, and will continue to devote, the powers of a very strong intellect, in the investigation of disease. Dr. Budd is one of the most strenuous cultivators of our science that I am acquainted with: and I am confident—without any affectation of modesty—that he will soon give a much better course of lectures than you have heard from me. That you may prosper in his instruction, and afterwards; that by the humane exercise of our noble calling you may do good in your generation, to others, and so to yourselves; is my earnest desire and prayer. I hope it is unnecessary for me to assure you that I shall always continue to take a lively interest in your welfare individually; and that it will give me sincere

pleasure if I shall find any future opportunity of rendering you any service. Gentlemen, I do not like this sort of parting, and I will not farther protract the pain that belongs to it; but bid you finally, and most cordially—Farewell.

#### CLINICAL OBSERVATIONS

ON

#### DISEASES OF THE SKIN.

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

[Concluded.]

*Papulae*.—Two orders of diseases remain for our consideration in the present season—the papular and the squamous. Of the former, I have cases of lichen and prurigo; of the latter, lepra and psoriasis. To-day we will proceed with the order *papulae*. The two cases of lichen before you are of a syphilitic nature, but they will answer our purpose to illustrate the ordinary form of the disease. Let us first clearly understand what we mean by a papular disease. You will recollect we defined it to be constituted by small conical, or hemispherical, elevations of the skin, sometimes flattened, in many cases more or less red, in others without any sensible change of colour. These elevations are solid, without any rising of the epidermis, and have rather an obscure anatomical structure; I say obscure, because I believe we are unable to say by the development of what particular elementary tissue they are formed, though it has been stated that they are sometimes constituted by a simple morbid enlargement of the papillae. In size they vary from that of a pin's head to that of a small pea.

Authors have created for papular eruptions useless species and varieties. What positive well-marked line of demarcation can be drawn between lichen, prurigo, and strophulus? Where is the constant characteristic type of each of these species? It is fugitive and uncertain; indeed, with regard to lichen and strophulus, no one seeks, in the present day, to draw any other line of demarcation between them than that of age; and between lichen and prurigo, except in well-marked cases, the line is very indistinct. In most cases, it is true, lichen presents its papulae in more or less distinct groups; and in one of the cases before you those groups are well defined. In prurigo the papulae are not so red as in acute lichen; but then, when lichen is chronic, there is often scarcely any difference between the colour of the papulae and that of the surrounding integument. Again, the papulae of prurigo are less conical, and they are also larger, than those of lichen; but those differences in degree do not constitute a broad differen-

tial outline. It is true, the blackish apex of each papule in prurigo is a marked feature; but it is not developed until the itching has become so intolerable, that the patient can no longer keep his nails away from the part.

The characters of lichen are as follow:—Solid and usually very small elevations are presented at one or more regions of the surface of the body. Sometimes they are slightly red, but most commonly their colour is similar to that of the surrounding integument. These papulæ are usually arranged in more or less regular groups, and they are attended by a good deal of itching.

Such are the broad features of lichen, but they are modified by seat, by age, by constitution, and by the acute or chronic character of the disease. To the various forms distinct names have been attached. Thus, when the disease is in its ordinary form, the papulæ very small and clustered, with a certain itching and slight desquamation, ending in a few days, it is termed *L. simplex*. It may be acute or chronic; in the latter case the duration of the disease is indefinite. In the acute form the disease is most commonly seen on the face or the trunk; in the chronic form the arms and the hands most frequently suffer. When the disease has lasted long, and produced much thickening and cracking, it assumes the form called *L. agrius*. When it affects a point covered with hair, and the disease is then more obstinate, it is called *L. pilaris*. When the papulæ are grouped in a more or less circular form, the circumference of the patch being most developed, the disease is often presented on the back of the hand, the forearm, the ham—it is the *L. circumscriptus*. When the papulæ are of a dark or livid red colour, and this form is most frequently seen in the lower extremities in debilitated persons, mixed with purpura, it is the *L. lividus*, which, I apprehend, is often a syphilitic form of the disease. In children, or persons with very irritable skin, there is occasionally presented a variety of this disease, called *L. urticatus*, because the papulæ are large, elevated, and white, or they are surrounded with a reddish areola, like the sting of a nettle. It may be presented in the form of an undulating narrow band, the *L. gyratus*; this is very rare.

Of *L. strophulus* we find many varieties described in books, depending upon varieties of colour, form, and dimensions. Thus when the papulæ are red and separated, intermixed with erythematous patches, it is *S. intertinctus*; when more confluent, affecting larger surfaces, *S. confertus*; when arranged in small circular groups, in different parts of the body, *S. volaticus*. When the papulæ are small and not many, whitish, with a pale red areola, it is the *S. albidus*. When they are larger and

thicker, without an inflammatory base, it is the *S. candidus*. In this way we eke out twelve varieties of lichen; and of what use is it, beyond rendering the study of the affection more difficult.

Now let us look a little more narrowly into this matter. The *L. agrius* is the most serious form of this disease; it may succeed to *L. simplex*, or may be developed spontaneously; the papulæ are redder, and more inflamed; in larger number and more prominent; the heat and tension greater than in the other varieties. The itching is more intense, and the nails too often impress a new irritation on the part, and may excoriate it, so as to occasion an exhalation almost like that of eczema *impetiginodes*, which concretes on the part. This form may take the acute character, and not last long; but usually its course is chronic, its exacerbations many, and its duration long. It may occupy the hands, the face, or other part of the body, may be in small or large patches, and may cover large surfaces. In *L. simplex* the little papulæ are resolved in a few days, with a slight furfureous desquamation. In *L. strophulus* the only difference from the *L. simplex* seems to be owing to age; it occurs usually in infants at the breast; frequently it is presented on the face, and commonly during dentition. The groups of papulæ have a rapid course. Sometimes the papulæ are whitish, surrounded by a reddish areola; at other times the patch has an erythematous appearance; and, according to such circumstances, the affection has been named *strophulus intertinctus*, *confertus*, *albidus*, *volaticus*, &c.; it rarely lasts more than three or four weeks.

The tropical form of the disease, the *L. tropicus*, I never saw; it is said to be painful, and peculiar to tropical climates. Dr. Johnson suffered from it in the West Indies; he describes it as pricking and itching, forcing him to get out of his bed to dab the parts affected with cold water.

The different forms of lichen may be mistaken for other diseases; thus *L. agrius* has been mistaken for eczema, impetigo, and psoriasis, the concretions and cracking being somewhat similar; but the vesicle, the pustule, the squame, and the papule, must be looked for to solve the difficulty. Papular eruptions may be developed as a consequence of particular modes of treating eczema or scabies, especially in children; but these are accidental complications. Eczema may be confounded with *L. agrius*, when no vesicles can be discovered; still the existence of papulæ, and the great thickness of the skin, are sufficient indications. In eczema the skin is thinned, and the affected surface usually less circumscribed. In *L. agrius* true pustules will

sometimes form ; and it is this circumstance which has caused it to be confounded with impetigo. *L. simplex*, in the face, has been confounded with rosacea ; in the hands, with scabies ; but prurigo, impetigo, scabies, and eczema, have been the most fertile sources of error. In prurigo the papulæ are large, flat, and of the same colour as the skin ; they almost always have a black head ; they are not in groups, and they never present that slightly squamous appearance which is common in lichen. Scabies is vesicular, and not papular. Lichen *circumscriptus* has been confounded with herpes *circinnatus* ; but in the latter the circumference is always more inflamed, and the centre comparatively free from disease ; and in the former affection the surface is rougher to the touch. *L. urticatus* may be mistaken for erythema *papulatum* ; but the patches of the latter are much larger, less red, and less prominent ; and they are never accompanied by so much itching.

The case before you, except in so far as concerns the intensity of its colour, is a good exemplification of what is known as Lichen *simplex*. There are, as you see, groups of small papulæ, about the size of millet-seeds. If the disease be acute, the papulæ are red, accompanied by heat and itching. In a few days the redness lessens, and there is a slight desquamation. When the disease is chronic, and this is the form which it most commonly presents, the papulæ are not much inflamed, and their colour is like that of the surrounding integument, and the itching is not severe ; but, as a kind of compensation for its lesser severity, it is much longer lived. And where it has been long fixed in a point, the integument is often much thickened.

Any of these varieties of lichen, passed into a chronic state, may be very obstinate, and then the itching may become extremely troublesome ; but in their acute forms they are generally very manageable.

In the treatment of these affections difficulties will be often experienced. Acids, laxatives, tepid baths, will be found sufficient in simple cases ; but where the disease is chronic, and the person is debilitated or in delicate health, it may be necessary to have recourse to particular tonics, such as iron and arsenic ; to use sulphur baths, stimulating, or even blistering applications. In the *L. agrius*, for some time soothing applications may be necessary ; and if the patient's condition justify, we may even have recourse to local or general bleeding. When by those means some of the more troublesome symptoms are allayed, mineral acids and purgatives are frequently useful ; and when the heat and irritation have quite abated, sulphuret of potash lotion and sulphur baths are often very efficient. So, in

very chronic cases, may be arsenic. When the induration continues, it is sometimes necessary to apply discutient agents, such as ointments of different preparations of mercury, with camphor.

*Prurigo*.—Of prurigo we are never wanting in examples in this establishment. This affection, which, until of late years, was very commonly confounded with scabies, is now as generally known as most of the other affections of the skin ; indeed, to prevent error in this respect, all that is necessary to bear in mind are the elementary forms and principal characters of this affection, which are very different from those of scabies. Prurigo is papular, and not contagious ; the skin implicated is unchanged in colour. The disease is usually presented on the dorsal surface of the limbs and trunk, and is always chronic. The itching is intense ; and to these circumstances may be added an accidental character, but almost always present—small blackish, bloody concretions, upon the apices of the diseased papillæ, resulting from violent scratching.

There are two particular periods of life in which prurigo is most commonly seen—early and late—infancy and old age. We are very much in the habit of referring this disease to misery ; and generally it may be correct ; but it is not peculiar to those to whom fortune has denied her gifts. The worst case I ever saw was in a man of rank. The fact is, it may exist in all seasons, at all ages, in both sexes, and in every condition of life.

We will now apply our general ideas to the case before you. The patient is 65, and has long been an inmate of the workhouse. Previous to her admission she had gone through every stage of misery, and, to crown it, this bitter aggravation came in the shape of prurigo. Since she has been here the affection has often been relieved, but never cured. If you look at the scapular regions, you see a number of raised black points irregularly spread over the surface ; but, if you look more carefully, you may see many raised points, of the colour of the surrounding integument, not only there, but over other parts of the body. These papulæ, however numerous, however prominent, are always flat ; the itching towards night is almost intolerable, and the scratching in proportion. In some cases the disease does not extend beyond a few weeks, but in most cases it may last months, or even indefinitely. When of long standing, as in this case, the papulæ become larger, and the skin is hard and dry.

The same pains have been taken with this as with other diseases, to multiply varieties ; and here, as in other cases, the varieties have been made to depend on the seat and the intensity of the affection. The *P. mitis*



has small papulæ, and moderate itching. The *P. formicans* has larger and more prominent papulæ, and more intense itching and burning; and it is more difficult to cure. The *P. senilis* may be either of the preceding varieties, with thickening of the skin, but chiefly the last; and it is then almost incurable; and may be accompanied with pediculi, so as to constitute the *P. pedicularis*. When it affects particular regions, it may assume the name of *P. podicis*, *pudendi muliebris*, *scroti*, *præputii*.

Prurigo is sometimes confounded with eczema and lichen, often with scabies. When the disease is in the vicinity of the genital parts, it is most likely to be confounded with eczema; but the absence of vesicles, and the violence of the itching, ought to be sufficient to prevent this mistake. But with scabies, especially in children, the disease is very frequently confounded; and they frequently exist at the same time. The elementary form, it is true, is very different. The seat of itch is between the fingers, upon the flexures and on the inside of the limbs. Prurigo is usually seen on the shoulders and the dorsal surface of the limbs; and the papulæ are surmounted, as you see, by small spots of congealed blood; but in young children it may exist over any part of the body. Itch is contagious; prurigo is not. The papulæ are larger, and cover greater surfaces than those of lichen; there is the black head, and there is more intense itching.

The present is not the only case where I have failed to cure prurigo; indeed, in old people the failures are more numerous than the successes. The treatment must be directed by the age of the patient, his condition, the state of the skin, and the region occupied.

There is one remedy which, whether young or old, if the itching be very severe, and if the patient's state will admit of it, will give great relief—blood-letting; and the remedy next in value is the tepid, and, when it can be borne, the vapour bath. No means seems to be effective while the skin is hard and dry; and you will find, in old people, that nothing tends so much to correct that state as the repeated use of the vapour bath. You may give every other remedy, but if you neglect those I have mentioned, in old cases, you will often fail. It is proper to use every means of bringing the system into a healthy state, by attention to diet and to the various functions of the economy; but, alone, these are rarely enough. In mild cases, and especially in young children, mineral acids are sometimes useful; so is a mixture of potash and sulphur, one part of the alkali to three of sulphur; but the bath must not be forgotten. In some cases I have seen good to

follow the use of the sulphuret of potash lotion or bath. In many cases the itching will be allayed by the use of carbonate of potash to the bath. In very old, obstinate cases, I have known much good to be derived from the Harrowgate water, taken diurnally, and employed externally. But these, and other means recommended in books, though they may have a temporary success, will often fail, if the disease be presented late in life. The disease is a great aggravation to the debility which often comes on at the closing years of life. Plato, Charles the Fifth, Charles the Ninth, are among those whose old age is said to have been embittered by it. Morrelet used to say, he was on St. Lawrence's gridiron every night, and used to get up many times to sponge himself with acetate of lead lotion.

#### SQUAMÆ.

Squamous affections consist of diseases in which scales, or *squamæ*, and smaller exfoliations, or *furfur*, are thrown off from the surface of the skin. The epidermis, under the influence of some alteration of the organic elements of the skin which secretes it, may be transformed into laminae more or less thick, more or less large, ordinarily whitish, which are thrown off in larger or smaller quantity. The skin below the scales may have undergone very little change in colour, thickness, or consistency, as in many cases of pityriasis, but generally it is inflamed, red, dry, sometimes rough, thickened, and in some cases accompanied by a slight exhalation. Squamous affections usually commence by small red, round, patches, a little raised, covered with greyish or whitish scales, as in psoriasis *guttata*. Of these patches there may be many, which may coalesce, and cover large irregular surfaces, *P. diffusa*; in certain cases they are ranged in more or less perfect circles, *lepra vulgaris*. These affections rarely assume the acute form; still more rarely do the same scales persevere to the end. They are usually thrown off in a short time, and are replaced by others, until the redness abates and the disease is cured. When these affections have lasted long, they may produce considerable thickening and fissures, as in *P. inveterata*. Sometimes the exfoliation of the epidermis is so abundant, that the bed at night, and the dress during the day, are powdered with the scales. Where the scales are small—furfuraceous—the disease is scarcely ever acute, and there is little change of colour of the skin. This form, pityriasis, is often seen on the scalp, and it is sometimes accompanied with falling off of the hair, which is, however, quickly reproduced. Neither the one nor the other of these forms leaves any sensible cicatrix be-



hind it. They are not often preceded by general precursory symptoms, and there is rarely any general reaction. The organic change which produces the desquamation is probably seated in the papillary sub-epidermic stratum; but little is known of the nature of this alteration, more than of the exact organization and the functions of this part of the cutaneous tissue.

We have already given our impression as to the division of squamous affections into lepra and psoriasis. We have termed the first *annular*, because its patches are ordinarily rounded, and because, at the centre of each patch, the skin is usually natural, seemingly depressed; but this is owing to the raised ring which surrounds it. This central space may be large or small. I have known it ten inches in diameter. The scales may remain on the circle long, or they may be quickly thrown off, and leave a red, raised, rugous surface after them. The colour of the scales may be whitish, greyish, or even sometimes brownish. Many of these rings may come in contact, merge one in the other, and thus cover a large surface. These circumstances are not very material, but, for reasons which will hereafter appear, it is proper to point them out. This sort of eruption may occupy indifferently almost every part of the body, but most frequently the elbows, the knees, and the vicinity of the joints, are the parts which suffer. Under those circumstances lepra is well marked; but we shall presently see that it may, under other circumstances, be difficult to discriminate between it and psoriasis, and therefore it is that I prefer to consider them together.

The second form of *squamous* disease, to which the term *psoriasis* has been attached, only differs from its predecessor in the form of the patches, which, in that we are describing, is irregular. The larger patches are formed of agglomerations of smaller elementary ones. The small patches may be separated from each other, so as to constitute what is known as *P. guttata*. At other times they may be agglomerated so as to form large patches, which may occupy extensive surfaces, *P. diffusa*. At others, though rarely, in ribband-like bands, *P. gyrata*. But all these varieties are mere differences of form. The disease may affect particular regions, and be very obstinate—may occupy the angles of the eyelids, the prepuce, the scrotum, the labia, the palms of the hands, the roots of the nails. All these distinctions, it will be observed, have reference to form and seat.

In the furfuraceous forms of squamous disease (pityriasis) the distinctions again are very unimportant. As there is more or less redness, it is termed *P. rubra* or *simplex*; as it is more or less brown, *P. nigra*; if it

have the colour of saffron, *P. versicolor*. If these circumstances be present they may be noted, but they are quite unimportant.

The functions of exhalation are usually ill performed on the affected part in all these cases; and this is not to be wondered at. Squamous affections are observed at all times and all seasons, but, like the greater number of cutaneous eruptions, they are seen more frequently, and when they already exist, they are subject to greater exacerbations, in spring and autumn, than in other seasons. I do not find that they affect one sex more than the other; but they are much more commonly seen after than before adult age.

The lepra of the West is not that disgusting and frequently fatal affection which is so common in eastern countries, but is comparatively a harmless disease. As we have already seen, there is no radical difference between it and psoriasis; the only particular distinction which can be drawn relates simply to the form. Probably, therefore, it would be better to reserve the term lepra for the tubercular disease alone. In that case we should include what are commonly known as lepra and psoriasis under one designation—psoriasis; which would then be distinguished by red and slightly prominent patches, covered with thin silvery white or greyish squamæ, in some cases presenting a circular, in others an irregular form.

In a large number of cases there is no apparent constitutional derangement to account for its production. I saw a young woman last week who was just shaking off an attack of psoriasis, which had covered every part of the body, except the face—even the scalp; but through it all, the functions of the economy seemed to be performed with the most perfect regularity. It is said that the seasons have a certain influence on it; and certainly a majority of the cases which have been presented here commenced late in autumn or early in winter—a period when, with many persons, cutaneous exhalation becomes dormant. It is said that the use of salted or seasoned food, and vinegar, and the abuse of spirituous liquors, tend to produce it; this I have been unable to confirm. Again, men are said to suffer to a greater extent than women. Of the last ten cases treated here, five were men and five were women. I have not been able to satisfy myself either that hereditary transmission is a common mode of producing the disease, except in ichthyosis.

The whole or any part of the body may be affected with squamous disease. I have known the face alone to suffer, and I have known the face alone to escape; but lepra and psoriasis shew a predilection for the neighbourhood of the joints, and particularly on their dorsal aspect; and without

constitutional disturbance. I do not mean to say that we never have these affections ushered in by constitutional disturbance; it may be that the head suffers, but in most cases it is the digestive organs; and very frequently a red deposit will be observed in the urine. In most cases the disease appears in the form of reddish slightly raised spots, which are accompanied by itching, rarely of great severity. Upon these points laminae of epidermis are soon apparent; the point enlarges, and the squamæ increase, but the surface is perfectly dry. It may happen that, instead of each point becoming sensibly larger, the number of these points increases, until, in some cases, the whole of the surface of the body is covered, as if drops of water were sprinkled over the part; this is the *P. guttata* of authors. Instead of this form the patches may be very large and irregular; these patches are usually formed by the coalition of smaller ones. In these cases the squamæ are sometimes very thick, cracked, and not unlike the bark of certain trees; this is the *dartre squameuse lichenoïde* of Alibert, the *P. diffusa* of English authors. When of long duration, with the integument indurated and cracked, it is called *P. inveterata*. Where it assumes the form of large, rounded, reddish, flat patches, covered with thin squamæ, some authors term it *P. orbicularis*. Where it assumes a narrow spiral form, it has obtained the name *P. gyrata*. When the disease affects the palm, as in a case you saw this morning, it is the *P. palmaria*; this form is often a consequence of habitually handling irritating substances. When it affects the soles of the feet, it is the *P. plantaria*. The man at present before you who presents the *P. palmaria* is a mason; it is not uncommon in polishers, bakers, grocers, &c. Psoriasis is occasionally seen on the prepuce (*P. præputii*), but I think much less frequently than is generally imagined. I believe chronic eczema and chronic herpes have often been mistaken for it. Again, it sometimes appears on the scrotum (*P. scrotalis*), giving that part a rough, thickened, cracked, scaly appearance. You saw such a case here last year. I never saw a case in which the labia were affected, the *P. labialis*. The *P. ophthalmia* I have now and then seen, where a considerable portion of the rest of the body was affected. Psoriasis may affect the scalp, but rarely alone. I saw, however, two cases last year, both occurring in young men; in one, psoriasis was confined to the hairy scalp; in the other, there was a second patch on the buttock. In both cases calomel ointment completely dissipated the affection. In the form of this disease to which the term *lepra vulgaris* has been attached, the patches are always more or less perfectly circular, the centre of the circle being usually

free from disease. The ring is raised, red, and scaly. The ring is formed of many separate raised points, which are so near to each other as to give a complete continuity; these several patches are very like those of *P. guttata*, and are covered with whitish, greyish, or silvery scales. There is another form of lepra, the *alphoides*; in this the patch is smaller, and the scales whiter. There is another form described, *L. nigricans*; if it be not syphilitic, it is very rare. Lepra may, however, present another form of development, preserving still the circular arrangement. The red points may confound themselves in one orbicular mass, the centre of which may be healthy. This is shewn in the case before you. You see this near the young man's elbow; and I think you will admit that it would puzzle any one to say it is not a case of psoriasis, if the irregular rings were covered over. In all cases, whether the form be that of lepra or psoriasis, the disease always commences with small spots—often at the elbows or the knees; these spots become agglomerated, and form either irregular orbicular masses or circles, which extend most along the dorsal surfaces of the limbs.

If the patient be quite at rest, the inconvenience from itching is often not great; but after exercise, or an imprudent meal, or any thing else which much quickens the circulation, the itching is often very troublesome. So long as the redness is very marked, the exfoliation is active; no sooner is one scale thrown off than another is formed; and this continues until the surface becomes paler, and the action ultimately becomes insufficient to throw off any more; then gradually the skin is restored to its natural character.

These forms of disease are so distinct, that a practised eye can scarcely confound them with any other affection. Eczema in its chronic form is most likely to cause a mistake; but the rules already given, to search for the vesicle, will usually be sufficient to unmask the character of the disease. In the scalp this circumstance is most likely to be met with; but then, as psoriasis and lepra are so rarely confined to the scalp, and as the vesicles are so generally present in eczema, mistakes must be unfrequent; in fact, psoriasis of the scalp is comparatively easily distinguished from other affections; and elsewhere, except to a beginner, the difficulty will not be great. It is, of course, possible to confound lepra with *favus scutiforme*, especially when the scabs of the latter have come away; but then lepra and psoriasis are rarely confined to the scalp. Porrigo is still more rarely seen on other parts of the body. At a period when pustules exist, or when the hair is destroyed, a mistake can hardly happen. With psoriasis, where the annular character of lepra is well marked, we cannot confound it; but be-

tween psoriasis *guttata* and lepra, in process of cure, there is no very clear distinction to be drawn. To say that the patches in *P. guttata* are smaller and less regular than those of lepra, will be to point out a very insufficient distinction; but a portion of the circle may remain. The difference between psoriasis and lepra being then simply one of form, and not of nature, and both forms often being present on the same subject at the same time, no separation should be made.

Even those who hold the diseases to be perfectly distinct, admit that the treatment should be, as nearly as may be, the same—careful feeding, blood-letting at starting, when it can be properly borne, purgatives, baths, lotions, blisters, caustics; such are the means which have been often used, and under the use of each and all of them the disease has disappeared. In many cases the disease has disappeared under the influence of some salutary change in the economy, without any particular treatment at all—often under the influence of some new disease. In many cases simple bathing, at others sulphureous baths, in others various unguents, have succeeded. At one time dulcamara was hailed as a specific. But in many cases these diseases require very methodical treatment, and even then will often resist for a long time, and reappear on spots where they had before yielded. This obstinacy has induced the use of potent remedies, *rhus rhadicans*, *elmus pyramidalis*, *meze-reon*, and dulcamara; purgatives of all kinds, cantharides, mercurials, arsenicals, iodides, have formed a part of the materia medica used in the treatment of psoriasis. These energetic remedies require much discretion in the exhibition, and we should consult the state of important organs. There is no doubt that they will often cure these affections; but the same remedy will not do in all cases and all circumstances. Cantharides has been employed for centuries in lepra; it was used by Hippocrates, Galen, and others; was revived by Mead. We employ it at present, and in some cases with much success, in quantities varying from five to thirty drops, twice or three times a day. With us the approved remedies are hot sea bathing, lotions of sulphuret and carbonate of potash, of dulcamara, of muriatic acid, bichloride of mercury, and pitch or citrin ointment, &c. If a patient be young and vigorous, and the disease active, no better course can be adopted than to take blood, to diet carefully, to exhibit evacuates, and to use tepid or warm bathing. You have seen the striking advantages of this plan in the case of the young man now before you; but if he be old or debilitated, such a course would be improper; then the diet should be good, and associated with bathing; the

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bowels should be regulated, and, if necessary, tonics should be given. In some cases the liquor potassæ, with bitters, answers well; in others it does no good. There is no doubt that external applications, such as calomel and white precipitate, and ioduret of sulphur ointment, will often advantageously modify the disease; but external means alone are rarely sufficient. Yet I have known some very remarkable cures to be effected by external applications and diet, and more particularly by the persevering use of the white precipitate ointment. Very rarely will baths alone, no matter what their form, cure these affections; they will often produce a marked improvement, but beyond this they rarely go. I generally rely more on vapour baths than any other. My experience of dulcamara, and it is now extensive, does not justify the expectations which were raised in its favour by Chrichton. I do not think it is without effect, and I think it often a useful vehicle for other remedies; but when carried sufficiently far to have any decided effect, the poisoning symptoms in the head and the stomach render it necessary to discontinue the remedy. Many medicines which act by increasing the functions of the skin are found useful, such as antimonials, pitch, &c. In this place I rely much on purgatives associated with alkalies, particularly potash; but when they fail, I try dulcamara with a mineral acid, associated occasionally with cantharides; and these means, with vapour bathing, and frictions with calomel, or white precipitate ointment, are usually of much avail; but in old or debilitated persons, where the redness is faint, much good may be got from arseniate of potash, soda, or ammonia. The skin at the affected points at first becomes reddened, and its vitality is so modified that the increased redness is not accompanied by increased desquamation; on the contrary, it lessens; the integument softens, and ultimately resumes its natural condition. But if local induration should persist, frictions with mercurial ointment, with camphor, or that of the ioduret of sulphur, and even blisters, are sometimes required to remove it.

## ON ARTIFICIAL CLIMATES

FOR THE RESTORATION AND PRESERVATION OF HEALTH.

BY JULIUS JEFFREYS, F.R.S., &c.

[Concluded from p. 964.]

### IV. On the temperament of the air of dwellings.

TEMPERAMENT is here employed in the sense formerly proposed, to denote the

condition of air with respect to heat and moisture—that peculiar and varying influence upon the human frame with which an atmosphere is endowed by different grades of temperature and of moisture acting together. The subject invites an enlargement upon it at considerable length, for there is much that is of importance to health comprised, and to some extent still concealed, within it. A few remarks only will be devoted to it here, in immediate connexion with the points discussed under the preceding heads.

Since Dr. Beddoes' ingenious but unsuccessful efforts to do much for pulmonary invalids by artificial climates, the subject has almost lain at rest. I have before expressed the opinion, that his want of success in the treatment of *pulmonary* affections arose, in part, from the atmosphere to which the lungs were subjected being the same as that which surrounded the skin; excepting when factitious mixtures of gases were breathed. I have also ventured to express a doubt if any very extensive benefit will ever be effected by inhalations of such mixtures; at the same time not at all questioning the occasional and partial utility of medicated vapours.

Of the value of air of a *temperament* varied to suit the particular case, and directed to the lungs alone, when that organ has to be especially treated, I have already expressed a high confidence, if it be employed with all the precautions formerly detailed.

Under the present division—the atmospheric treatment of the lungs and skin—the *temperament* of the air is also a matter of no small moment; though the range of the humidity is much more limited than may often be of benefit when the atmosphere is being prepared for the lungs alone.

The universal employment of open fires in England has rendered it less necessary to pay attention to the hygrometric state of the air of our houses than with any other warming system. An open fire warms the air, as already explained, secondarily, through the surfaces of furniture and of walls warmed by it. This mild action produces little of the exsiccating effect of metallic surfaces heated to the range of even the most carefully constructed close stoves. Yet air which, in a north-east wind, is already dry at 32°, be-

comes more arid at 62° (the choicest temperature) than should be the condition of that prepared for persons under most states of pulmonary irritation. A susceptible invalid finds so many causes, either acting through the skin or through the stomach, or arising from changes of position, which are liable to cause fits of irritation in the lungs, that he may never suspect any fault in the air of his room, so warmed as to be suited exactly to his outward feelings. Our perception of dryness and moisture is not by any means so acute as of heat and cold. The smallest variations of temperature are at once perceived; but though extensive hygrometric changes are both injurious, and to the feelings distressing, a hygrometer may be observed to vary considerably in a room, without the air being distinctly felt by an invalid to be drier or moister than before. Yet it is plain, that if the air in the moister state was that best suited to act on the lungs and skin conjointly, it cannot be so when in the drier state. And this truth will assume greater force when we bear in mind the fact, so much dwelt on in former parts of these papers, that an atmosphere which has to act *conjointly on the lungs and skin*, must be less humid than, in a majority of cases, would have been most soothing to the lungs, if supplied to that organ alone.

The best temperament, then, for the whole air of a *room* is one already quite as dry as is really suitable to the lungs in most cases of pulmonary irritation; whether the irritation of the membrane arises directly from simple bronchitis, or is that of tubercles extending itself to the membrane. If already fully as dry as is suitable to the lungs, the air cannot become more dry without acquiring a tendency to foster, instead of soothing the irritation. In this manner, as I have no doubt, an attack often gradually comes on; while the patient having paid all due attention to the *warmth* of his room, endures with patience the growth of symptoms which, not perceiving their insidious cause, he considers the natural precursors of an inevitable attack.

Something has been written and done, of late years, in the way of hygrometric arrangements for tempering the air of dwellings; but it is far less than the importance of the subject re-



quires. As to the common proposal of a basin of water set on a table or on a stove, it is for the most part wholly insufficient in its action, and at the same time very unequal, there being no provision for regulating the evaporation.

It is a curious fact that, in Western India, our chief means of rendering the climate tolerable consist in cooling and moistening it by throwing so much moisture into the air, by carrying it through *tatties*\*, as to reduce its dryness much below that of the air of many rooms in the winter in England. I have known the thermometer to stand at 118° on the outside of the *tattied* door-way, and at 84° on the other. It is not uncommon to have the air at 110° outside, and 76° just within the tatty. With a machine I constructed in 1825, and named a refrigerator, the air of a room was brought nearer to the temperature of a moistened bulb thermometer, than I had supposed possible, or than I afterwards considered prudent. Yet I cannot say that I desisted from carrying the humefaction so far, from any injurious effects I perceived from it. I have, however, had to recommend patients not to carry the humefying process quite so far as was indicated by the state of the atmosphere of their rooms. At the same time, it is an unquestionable and universal fact, that persons who are yearly careful to dwell in a well moistened atmosphere, maintain their health, and retain their European vigour and complexion, to a period far beyond that to which those persons last who neglect the precaution.

In many rooms heated by stoves, people expose themselves to an atmosphere of almost as many degrees of dryness as are in a sirocco, or in an untempered up-country hot wind in India; and, what is worse, they come in upon such an atmosphere suddenly from without, where air but moderately elevated above the dew point was causing little demand for moisture on the skin, and especially on the lungs. We cannot wonder at serious consequences resulting from subjecting suddenly a delicate membrane to such an exsiccating process. It would, as I have no doubt, be fatal, but for physiological reasons connected with the statics of

the chest, which I shall not enter into here.

Such considerations as have been published throughout these papers, it may be well supposed, have long impressed me with the conviction that the arid atmosphere of many rooms, and especially of offices where close stoves are most employed, was productive of mischief to the health to a much greater extent than commonly supposed. Lately, cases painfully corroborative of this fact have come within my knowledge.

But we must not confine the idea of injury to such extreme cases. It behoves us to watch with the minutest attention any traceable connexion between a rise in the dryness of a patient's apartment, and a growth of irritation in his chest. Assuredly we cannot pronounce the object to be sufficiently kept in view, while it is notorious that there are no measures ordinarily in use for giving any thing approaching to a determined and equable *temperament* to the air of rooms. On some future occasion I shall hope to describe an apparatus for supplying this hygrometric want. It is in vain that we possess the elegant and accurate hygrometers of Professor Daniell and others, unless we have the means by which their indications may be attended to.

Besides this point of due humidity, we must bear in mind not to exsicate our air too much previously to moistening it. We shall not correct all its defects by *subsequently* giving a proper quantity of moisture to it. The floating particles in it of organic matter have been changed in their character, and rendered irritating by high-drying. Such air is doubly injurious, by this change in the organized matter floating in it, and by its great dryness. The latter may be corrected by the vapour of water, or by its mixing itself with moister air; but the irritating property of its particles, we have reason to believe, remains nearly the same. When the drying has been carried to the extent of giving them a burnt odour, we do not find it removed by any humidity in the air. It is rendered rather more perceptible. This fact it is of much importance to notice, in order to correct the idea of those who think that the defects of air which has been exsiccated by passing over hot

\* Latticed frames of bamboo interwoven with the roots of a peculiar grass, and kept drenched with water.



metallic surfaces, may be corrected by moisture added afterwards.

With respect to the hygrometric state of the air suited to the generality of constitutions in health, and in various diseases, we have no body of carefully observed facts from which general rules for each can be formed. One point has to be kept well in view—that there is some proper ratio in which the temperature and moisture should vary together; the same number of degrees of dryness which represent the desirable average for air at the temperature of 50° not being the choicest hygrometric point for air at 70°. And in health we shall find it conducive to vigour to fix a higher standard of dryness than in most diseases; also in hepatic than in pulmonary diseases. Indeed, in the former, I have often observed the functions of the skin to be so much impaired, and the cutaneous action so torpid, as to be performed in any sufficient degree only in an arid atmosphere. Such an atmosphere, however, is a destructively exhausting stimulus, and not by any means to be recommended. Many years ago, in a little work on Mountain Climate, published in India, I stated various reasons upon which I was led to consider a diminished atmospheric pressure desirable in certain cases where the cutaneous and hepatic functions were exhausted by long excitement. Where this can be commanded without too great a fall of temperature, and without a hygrometric state of the air too far removed the other way from aridity—that is, without placing the patient in a cold and damp air—I can entertain no doubt of the great value of a *light* atmosphere in many of such cases, carried even to the extent of having nearly a ton of pressure removed from the surface of the body. It is quite an error to argue, upon hydrostatic principles, that this equal removal of pressure from the whole surface of the body has no effect on the animal economy beyond that upon the respiration. But the subject is not one immediately under consideration, and it belongs to too wide and new a field of inquiry to admit of being entered upon here.

With respect to the hygrometric state suited to pulmonary affections, we may learn, from the arguments of the former pages, and from the opi-

nions of the most experienced observers, that air with much fewer degrees of dryness in it is desirable, than that which is invigorating to persons in health. In the case before us, where the atmosphere is not presented to the lungs alone, but acts also on the skin, the humefaction of it cannot with benefit be carried so far as if it were being prepared for presentation to the lungs only: hence, as formerly remarked, we find a limit soon set to the degree of moisture desirable in the air of any climate to which a pulmonary invalid is to be sent. If we look closely into the cause, we shall doubtless find, in most cases, that it is not the presentation of the humid air to the irritated lungs which proves unsuitable, but the general immersion also of the body in it, by which the action of the skin is restrained, whereas it ought to be rather increased at the time when the irritated lungs are permitted, by means of the humidity of the air, to lessen the amount of their exhalation. Since it is only at times that we could keep up the supply of two separate atmospheres to the lungs and to the skin, it becomes necessary, as it were, to compound the matter between the fomenting degree of humidity, which the lungs would, in numerous cases, delight in (provided it were accompanied with suitable warmth), and the proportionally drier air by which, in that case, the skin ought to be surrounded, to make up for the diminished exhalation by the former organ.

To be suited conjointly to the lungs and skin of such invalids, we require an atmosphere intermediate in dryness between the two grades we might desire to command, if we were treating the lungs and skin separately. What the average grade of dryness should be of such an atmosphere, we have not, by any means, sufficient data to determine. Any one grade could be no other than an average, since the requirements of different invalids must differ much. We may, however, perhaps venture to fix, with the *temperature* of the air at 62° Fah., an average of *dryness* of from ten to fifteen degrees expressed by the same scale, as that suited to most pulmonary invalids; while, for persons in health, the choicest range is, perhaps, between fifteen and twenty degrees of dryness.

When we consider that, in many

places heated with close stoves, the air of a whole room with the dew point often as low as  $20^{\circ}$ , is raised to the temperature of  $65^{\circ}$ , without any moisture being communicated to it, or very little, by some trifling means, we need not wonder at mischievous effects being produced, even upon healthy persons, by such an arid atmosphere, forty-five degrees above the dew point. This dryness must be very trying, especially to the lungs, besides the deleterious effects of the particles of organic matter in an acrid state from exsiccation.

To conclude:—The length to which these papers have run leads me to omit many practical details promised in the introduction. It was at one period my purpose to have published the practical views contained in the series of papers now completed, and others, relating rather to domestic comfort than to medicine, with certain physiological views which had formed the basis in my own mind upon which the practical had been constructed. It appeared, however, desirable that the latter should be kept separate, so as not to appear involved in disputable questions in physiology. This I have therefore been careful in doing, with the exception of one question connected with the action of the capillaries, which has been stated in as cautious a manner as the case required. The physiological views have been for a considerable time mentioned to friends, as about to form a work on the statics of the human chest; and they must be struck with the identity of *certain* of them with some of those forming the basis of the recent publication of Professor Liebig\*. It is a ground for satisfaction, that they have appeared from the pen of so superior a chemical philosopher, and that so valuable a superstructure should have been built upon them as that which forms a part of his work. At the same time we must not allow ourselves to be carried away with persons whose admiration of that superstructure is unqualified. How-

ever great must be our satisfaction at every successful effort to expand chemical physiology beyond its former limits, it behoves us, if we would prefer to a temporary pleasing of the fancy an advance of chemical physiology, by such steps only as shall be rigidly and demonstrably true, to discern aright between such of the views in the work in question as are safely admissible, and those of which a sound philosophy must pronounce some to be very questionable, and many utterly untenable.

#### ON THE CURE OF THE DEAF AND DUMB.

*To the Editor of the Medical Gazette.*

SIR,

IN the MEDICAL GAZETTE for August the 19th, there is a notice of a communication published by Dr. Kramer, of Berlin, in Caspar's Wochenschrift, on the treatment of the deaf and dumb, in which he endeavours to show that no confidence is to be placed in the report of cures of the deaf and dumb: and he states as his opinion, that the deafness of that unfortunate class of beings is altogether incurable. In this paper Dr. Kramer remarks, that the cases published by Professor Lax, Mazzoni, Peez, Felibien, Merle, Saeves of Stockholm, and Barries of Berlin, as well as those narrated by myself, are either incomplete, imperfect in their history, or else misrepresented. I trust to your sense of justice to afford me an opportunity to defend myself against such wholesale and unfounded charges, and to shew that Dr. Kramer, notwithstanding the overweening opinion he entertains of his own abilities, is yet thoroughly mistaken upon this point.

In support of his argument, Dr. Kramer mentions the appearances presented in the organ of hearing after death, in several cases of deaf dumbness, where structural deficiency obtained to an extent calculated wholly to preclude the possibility of the function of audition being carried on in the diseased organ; and triumphantly remarks that, in these cases, no treatment could have been of any avail in removing the deafness; but, at the same time, he conveniently forgets the cases placed on record, where no disorder of the organic structure was discovered

\* It is due to our countryman, Dr. Collier, to remark, that certain facts connected with the development of animal heat, which form, perhaps, the more striking points of the Professor's work, were noticed by the former gentleman, seven years ago, in the plainest terms, in a work to which he has referred me, "Sir J. Ross's Appendix to the Narrative of a Second Voyage," &c.

by the most minute search. Dr. Kramer is a one-sided philosopher; he takes into view only so much of the question as favours his own opinion, and carefully leaves the remainder for his successors. In the first edition of my work, published in 1817, nearly twenty years before Dr. Kramer's book appeared, I advocated the opinion now put forward by the Doctor, that structural disease of the organ offered a perfect impediment to either a cure, or even relief of the deafness; but I am of the same opinion as Itard in this respect, that structural disease does not occur in more than one case in five, leaving consequently many cases in which medical assistance may prove of service; and I do not acknowledge that "the weakness of the nerve approaching to paralysis, or an actual paralysis of the nerve," which Dr. Kramer assumes to exist in those cases where congenital cophosis is present, and no structural derangement, must necessarily be as incurable as structural deficiency. We are not apt to abandon incipient palsy of a nerve of sense or motion in other parts of the system without an attempt at relief; and I see no reason why the unfortunate being afflicted with deaf dumbness should be surrendered to his fate, without a well-directed attempt being previously made to redeem him therefrom.

Kramer condemns the cases recorded as cures by Itard, Deleau, and others, because, when published, the patients had not acquired a facility of speech equal to that evinced by other people of the same age; forgetting that when the deafness has been cured, the individual is placed precisely in the position of a child that has to acquire the faculty of speech, and not unfrequently the power of thought, while, at the same time, if he have approached the age of puberty, he has to contend with false impressions created by the erroneous perceptions which affected him while unable from his infirmity to impart his feelings and ideas to his fellow-creatures; in fact, he is placed in the same position with regard to hearing that Cheselden's patient was with respect to vision. The organ, when the cophosis is removed, requires to be carefully educated to perceive, understand, and distinguish the variety of sounds which will impinge upon the auditory nerve—a task requiring much

time for its accomplishment. The cure of congenital deafness, consequently, may be effected, and yet rendered effete, for want of the necessary subsequent education.

Besides the cases of congenital deafness attended with dumbness as a necessary consequence, cophosis may be induced by several causes, as accidents, fever, measles, scarlatina, dentition, after birth, before the faculty of speech has been acquired, by which the unfortunate sufferer will be certainly reduced to the unhappy condition of deaf dumbness, unless medicine step in to his aid. Many mothers have mentioned that their children could hear, and some had acquired more or less the faculty of speech, until hearing was lost either by fever or dentition, when the power of articulation was lost with it. Many of these cases admit of amelioration, some of cure; and I hold that wherever there is a chance only of doing good, it ought not to be neglected; it may certainly raise hopes which may be nullified hereafter, but not in the patient, who cannot comprehend the motives of the proceeding; nor would the friends be much annoyed thereat, if the surgeon has performed his duty properly, by shewing that although there is a chance of success, it is after all only a chance. It does not occasion a loss of valuable time, worthy to be put in competition with the prospect of restoring even one individual to the enjoyment of the society and converse of his fellows. Were children, as soon as they are suspected of deafness, submitted to inspection by competent medical persons, instead of being allowed to remain deaf until nine or ten years old, by which time the weakened nerve has become paralytic, and then admitted into asylums and treated as incurably deaf, the result would, in some cases at least, be very different, and many would be rendered useful members of society, who, under the present system, remain hopeless objects of commiseration as long as they live.

The tables of M. Schmalz shew that of 5425 cases of deaf dumbness, 3665<sup>9</sup> were congenital; the remaining 1760 occurred after birth, the majority of which probably admitted of relief or cure; but the whole of which, under Kramer's plan, must necessarily be consigned to an asylum. When in

Paris, M. Deleau shewed me some children who had obtained their hearing and speech under his care; and when at Berlin, I visited the general hospital, in company with Dr. Anglestein and Dr. Böhm, the physicians to the hospital. I then proceeded with the latter gentleman to the Deaf and Dumb Asylum, where I received every assistance in my inquiries from M. Saegert, the superintendent of the Asylum. I was permitted to examine the children, and I found that many of the most healthy could hear a little. Since that time I have received letters from Dr. Böhm and M. Saegert, approving of my plan of treatment, and expressing their intention to make a trial of it in their institution. In the asylums at Vienna, Hamburg, and Leipzig, also, I found several children who could hear; and I have no doubt that there are many children in British asylums who can hear, and who might, by proper means, be restored to the full enjoyment of the sense of hearing and speech.

As a proof of the improper way in which children are admitted into asylums, I may state that, at the Asylum in Leipzig, which I visited, according to the report furnished by M. Reich the director, published in my *Aural Surgery*, out of 56 patients, 22 cases were not congenital. M. Reich considers the most frequent cause of deafness (after birth) to be scarlet fever. Of the patients in the Asylum, five could hear words a little, and eleven could hear something of sounds. It is perfectly possible that, by proper care, that power might be much increased.

I perfectly agree with Dr. Williams, who says, "a cure ought always to be attempted, and that at the earliest moment at which deafness is detected; and children so affected should mix with others not deaf, and no symbolical education should take place until all chances of cure are gone."

When I was at Dresden in 1840, I saw Schmalz, who gave me his book, and who fully sustained the opinion I have emitted, that there is much to be done in many of these cases. I addressed a letter in 1817 to the Committee of the Deaf and Dumb Asylum, for which I received their thanks, urging that a methodic examination should be made in all cases; and where there was not any structural defect, then an

appropriate treatment should be enforced. This letter did not produce the effect intended; but I have no hesitation in saying that the time is approaching, when the truth of this opinion will be acknowledged.

I am happy to state that, at a late meeting of the Governors of the Royal Dispensary, it was proposed, as soon as the funds would admit, to allow deaf and dumb patients to be received, to be boarded and lodged in the house, so as to give a fair opportunity for following up the plans proposed, which, from circumstances, are only partially adopted at present.

In conclusion, sir, I beg to reiterate my opinion, that a careful examination should be made early of every deaf and dumb child, with the view of ascertaining the possibility of a cure; and that a symbolical education should not be resorted to, until all other means had failed.—I am, sir,

Your obedient servant,

JOHN HARRISON CURTIS.

2, Soho Square, Sept. 17, 1842.

## ACCIDENTAL RUPTURE OF THE UTERUS.

*To the Editor of the Medical Gazette.*

SIR,

As you were kind enough last October to give publicity to a very interesting case of "Accidental Rupture of the Uterus," which occurred in my practice, I hope also you will not deem some further particulars respecting it unworthy a place in your valuable journal upon the present occasion; my patient having, I am happy to say, gone through a second accouchement in perfect safety, and being at the present time in excellent health. To my highly esteemed obstetric teacher and friend, Dr. James Blundell, of Great George Street, Westminster, should they meet his eye, I doubt not these particulars will afford no small gratification, illustrating as they do the soundness of those practical obstetric axioms which he was wont, with so much eloquence and energy, to enforce upon the minds of the students at Guy's Hospital in by-gone days; and in whose grateful remembrance and estimation he will, I am sure, be long and affectionately retained.



On the 15th of February last (an interval of about ten months from the period of her first accouchement) my attendance was requested: as she was again taken with slight hæmorrhage and some pain. Not having seen her for some months, in consequence of her removal from this village to South Waltham, I was much surprised on visiting her to learn that she considered herself full five months advanced in pregnancy, having distinctly felt the motions of the foetus for rather more than a fortnight previously. I, of course, administered such medicines as I deemed suitable, and strictly enjoined absolute rest on a couch or bed. She soon got better, and in a few days resumed her stand behind the counter (her husband being a general shopkeeper). On the evening of the 24th of the same month, I was, however, hastily summoned to her, in consequence of hæmorrhage having again supervened, together with regular pains at intervals of every two minutes. On examination, I found the foetal head descending into the pelvis, and very soon afterwards the delivery was accomplished. After waiting twenty minutes, I extracted the placenta, which was partially adherent, in doing which I was particularly careful not to carry the fingers further into the uterus than I could possibly avoid, and all hæmorrhage ceased immediately after its extraction. I then took the opportunity of making a very careful external examination of the abdomen, and could distinctly feel the contracted uterus in the hypogastric region *per se*; and above, and a little to the right of it, a hard and irregular mass, which I believe to be the escaped foetus of the former pregnancy, now most probably partially ossified, and in size fully equal (perhaps rather more so) to a large foetal head at the full period. The present opportunity was not to be lost, and having understood that great pains had been taken through the medium of a neighbour (the patient of a neighbouring practitioner) to make her believe that I had all along been deceiving her as to the existence of another tumor in the abdominal cavity, I made her then trace with her own hand the two distinct substances, and so convincingly plain were they, even to herself, that I believe she is fully strengthened as to the correctness

of my diagnosis; and my own subsequent examinations have, if possible, rendered the fact still more palpable.

She speedily recovered from her confinement, so, at least, as to be able to attend to her ordinary duties in three weeks afterwards, and although she has occasionally been the subject of slight hæmorrhage, which a recourse to medicine speedily arrests, yet, with the exception of her preserving an extraordinary blanched appearance, and finding herself incapable of much exertion, she is as well as usual.

September 12.—Being only yesterday called upon to attend a relation of my patient, I was glad to hear from her that the subject of the above case was quite well. Although still blanched in appearance she expresses herself as being much stronger than last year, and says she has had no hæmorrhage or discharge, except at the regular periods, since the last date, but she also remarked, "I still feel large to myself, and I can feel the 'hard substance' is rather lower down."—I am, sir,

Your obedient servant,

HENRY K. RANDELL.

Acle, Sept. 12, 1842.

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## MEDICAL GAZETTE.

Friday, September 23, 1842.

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"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO

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## THE POPULATION PROBLEM.

It is lucky for the population-mongers that they did not live in Swift's days; for most unquestionably he would have given them a niche in the Academy of Laputa. The philosopher, who attempted to extract sunbeams from cucumbers, or the architect who insisted that houses should be built from the top downwards, did not advance any absurdity more gross than the theorist who would extract happiness from the "moral check," or improve society by upsetting the instinctive charities upon which it is founded.



Goldsmith gives us the journal of an astronomer, who, while watching the aberrations of the moon, is careless about those of his daughter. The latter runs off with a grenadier, and this he bears with patience; but the irregularities of the former he finds unaccountable and intolerable. Just so the Malthusian is indifferent to what passes before his face, and bears the misfortunes of his neighbours with infinite equanimity; but he is alarmed to the highest degree by the possible increase of the human species in a couple of centuries—the uncomfortably crowded state of the world in 2042 fills him with unspeakable pity. He would make any sacrifice (of other people's happiness) to prevent it.

Such are the fears which have sprung up with the last half century; fears from which our ancestors were happily free. Indeed, it is remarkable that formerly the current of apprehension flowed in a contrary direction; and poets and statesmen alike thought that population was diminishing. The decay of population in England was one of the constant complaints of our ancient parliaments; and as it was ascribed in part to the disuse of tillage and increase of pasturage, it was once asserted that a sheep was a more devouring beast than a lion.

In the "Coltness Collections," lately published by the Maitland Club, there is an interesting account of the journey of a Scottish lady from Edinburgh to London, in the middle of the last century. She was far from being struck by the populousness of the southern division of our island: rather the reverse. "I did not think England sufficiently peopled, nor so populous by far, in proportion to its extent and produce, as the best cultivated counties in Scotland."

This was in 1756. At a later period

still, we find the author of the *Deserted Village* exclaiming with regret—

"A time there was, ere England's woes began,  
When every rood of ground maintained its man!"

At last, towards the end of the century, came a violent reaction; and since that era the sight of a large family of poor healthy children, formerly so agreeable to the calculator as well as the philanthropist, has filled the political economist with dismay.

The friends of humanity and the followers of Malthus have long disputed on this question; the former appealing to common sense and good feeling, the latter to tables of geometrical progression. The Malthusians have triumphed in the passing of the New Poor Law; while their opponents have achieved several mitigations of this arbitrary code, and are destined, we trust, to effect many more.

Meantime, Dr. Loudon has come into the field with the hope of reconciling the combatants, and in a French work now before us he endeavours to give a practical solution of the difficulty\*.

Beginning in the established manner, Dr. Loudon tells us of the fecundity of rabbits and herrings, and the progressive increase of the population of Ireland during the last 150 years. Should it continue at the same rate for the next two centuries, Ireland would contain 128,000,000 souls. As for England, it has been shewn by various men of figures that it might nourish 120 or even 300 millions of inhabitants. To effect this, however, we must give up horses and oxen, *désempoissonner* or disfish our rivers, and turn fair Albion into a *série de jardins de pommes de terre*,—a most undesirable conclu-

\* "Solution du problème de la population et de la subsistance, soumise à un médecin dans une série de lettres, par Charles Loudon, Docteur en Médecine, ex-commissaire de S. M. Britannique, chargé de l'inspection des enfants employés dans les manufactures d'Angleterre. Paris. 1842."

sion! Suppose a race of men placed in a fertile country under the most favourable circumstances, without war or foreign levy, without let or hindrance to their continual increase; in short, let Utopia be realized, and population might double every fifteen, or even every ten years.

But wars, epidemics, the want of the necessities of life, late marriages, and the bad physical education of children, prevent this from ever happening; so that a doubling of the population once in twenty-five years, which has taken place in North America, has been the quickest increase known\*.

The terror inspired by so rapid an increase, drove Malthus to affirm that the only remedy for these evils, the only check to the most frightful increase of population in these islands, was to put off marriage to the age of twenty-eight or thirty. This proposition is sufficiently demoralizing, and if adopted would convert a kingdom into one huge brothel; but other and worse abominations have been suggested, until at last, some three years since, we arrived at Marcus's proposal for stifling new-born infants with carbonic acid gas. As for wars, their influence on large populations is small indeed. What wars, for instance, would take off the 3,749,094 persons added to the

population of Prussia between 1816 and 1836?

Dr. Loudon admits the premises of Malthus, as well as his conclusion that population has a strong tendency to outstrip the means of subsistence; but at the same time he allows that the "moral check," as it is impudently called, would be the most enormous encouragement to vice. How, then, does he get out of the dilemma? In a curious manner enough; by the recommendation of long suckling. He observes that, in late works, the time recommended for suckling is from twelve to fifteen months. The longest of these periods was the usual time during the last century in Germany, France, and even England. In the days of Ambrose Paré, the ladies of the French court suckled their infants for eighteen months; while Mahometan women, in obedience to the Koran, perform this duty for two years at least. Longer periods, however, have been common. Thus, in the second book of Macca-bees, we find an instance of a mother suckling her child for three years. This, too, is the usual period among the aborigines of America, from the most northern point to Cape Horn, and also in many parts of Africa. Chateaubriand mentions an American child which was suckled up to its seventh or eighth year; and Captain King, in the account of his voyage to the North Pole, speaks of a boy whom he saw return to his mother's breast, after making use of his bow and arrows. A lady of good family in Warwickshire, told Dr. Loudon of a case where a young lady was suckled up to the age of sixteen, and then died of vexation at being weaned. In the thirty-third number of the *Medico-Chirurgical Review*, there is an account of one Judith Waterford who suckled uninterruptedly

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\* Is the following passage French? We think not. Cent acres de terres les meilleures pouvant aujourd'hui suffire à la subsistance de cent habitants, ne pourraient pas être mis en état de rapporter plus que douze fois la quantité d'aliment actuellement produite en trois cent ans, tandis qu'au lieu de cent habitants qui vivent sur ces cent acres de terres, il en pourrait demeurer et exister, si l'accroissement géométrique recevait tout le développement dont il est susceptible, 409,600, tous descendants de cette première souche de cent habitants, et cela s'effectuerait dans le même espace de trois cents ans.

A native critic would say that without sparkling clearness, and compact elegance, a man cannot write French, though he may use French words. Dr. Loudon should commit the second edition of this work to the care of a sound *littérateur*.

for forty-seven years. She had milk in her breasts in her eighty-first year; and Dr. Loudon, on a recent tour to England, found the fact to be as alleged. A similar instance is given by Meckel, and several are narrated by Sir Astley Cooper in his work on Diseases of the Breast.

On the whole, however, three years seems to be the best and most natural period. In Macrobius's commentary on Scipio's dream, it is observed that at seven months the teeth begin to appear, and that at twice seven the infant can sit. At thrice seven he talks, at four times seven he walks. At five times seven months the child begins to dislike the nurse's milk, unless he is induced to bear it longer by the force of habit.

Dr. Loudon is often asked how often in the day the infant ought to have the breast; how long it ought to be suckled without being fed; when vegetable diet ought to be given in addition to the mother's milk; when it ought to be weaned, and when animal food ought to be added to the vegetable?

To which he answers, it should have the breast every two or three hours; have the mother's milk alone for the first fourteen months, and, with the addition of cows' or goats' milk, till it is three years old; farinaceous or vegetable food being added when it becomes necessary. As for the three years' suckling, Dr. Loudon affirms that it is backed by the practice of those mammalia which bear but a single young one. The period of suckling is always one-seventh of the time required for attaining maturity, and one-forty-ninth of their most prolonged existence. Thus the elephant becoming adult at eighteen, and living to one hundred and twenty or thirty, the female suckles her young to the age of two and a half; and as man is completely developed at one-and-twenty, and may live, according to Dr. Loudon,

to a hundred and fifty, children ought to be suckled to the age of three.

On the whole, we think that the arguments against Dr. Loudon's proposal are chiefly these:—

First, there is something grating to every sound mind in any scheme intended to prevent conception.

Secondly, under the present system, so many women bear ten or twelve healthy children, without damage to their own constitution, that child-bearing once in sixteen months would seem quite as natural as once in four years; the period fixed on by Dr. Loudon.

Thirdly, long suckling is practically found to be highly injurious to women's constitutions.

To the first objection Dr. Loudon answers:—

That he should think it impious to propose this long suckling in order to prevent conception, but that he does so because it is the natural term.

The third he answers by denying the fact, and affirming that women who cannot suckle are to be deemed mere exceptions.

We are not sure whether he answers our second objection at all, but it is of less importance.

The balance of our judgment is certainly against the plan. Dr. Loudon is evidently a benevolent man, but has been fascinated by the Malthusian figures and statements. If systems are known by their fruits, we would ask him what kind the theory of population has borne—whether any grapes have been gathered from this bramble? From the original treatise of Malthus to Marcus's pamphlet, from the New Poor Bill to the discouragement of charity, public and private, all speaks loudly against the theory whose development leads to such terrible results. What is wrong must be based on what is false.

## MEMOIR OF BARON LARREY.

By M. E. BRESCHET.

JEAN DOMINIQUE LARREY was born in 1766, in the small village of Baudeau, near Bagnères-de-Bigorre. During his infancy he lost his father and mother, and was indebted for his early education to the generous kindness of the Abbé Grasset. Soon, however, an uncle, who practised surgery at Toulouse, undertook the direction of his classical studies, and induced him to enter on his medical career. At the age of 15 Larrey became a pupil of his uncle. He devoted seven years to his elementary medical studies, and then presented himself before a concours for the situation of surgeon in the marines. He gained an appointment, and in 1787 sailed for the colonies on board the frigate *Vigilante*; and from the very commencement of his military career he gave proofs of his zeal, his foresight, and his devotion to the service.

He shortly returned to France, and was appointed *chirurgien interne à l'hôpital des invalides*; and, a few years after, having obtained a commission as surgeon's chief mate, he accompanied the army of the Rhine.

M. Larrey took an active part in bringing about the improvements which were introduced in the ambulances of the army. The services which he performed in this department were so great, that in 1793 they were signalized by a public recognition. We read in the report of General Beauharnais, after the battle of Mayence:—"Among those whose intelligence and activity have brilliantly served the republic on this day, I must not omit to mention Adjutant-General Bailly, Abatucci, Surgeon-Major Larrey, and the company of ambulances volantes, whose indefatigable care in dressing the wounded has done much to diminish the affliction of the day, and assisted in saving many brave defenders of our country."

It was at the suggestion of Larrey that these ambulances volantes were attached to the vanguard of the army commanded by Desaix. In Egypt, and in the deserts of Lybia, where the French army were subject to every privation, Larrey was of essential service in animating the courage, and sustaining the strength of the soldiers.

The indefatigable activity of M. Larrey has been witnessed through every country into which the French armies have carried the national standard during the late wars: thus Germany, Holland, Italy, Corsica, Spain, Poland, Russia, have admired his zeal and his talents, and experienced the benefits of his philanthropy.

In 1794 M. Larrey was appointed sur-

geon-in-chief; and a school of medicine and military surgery having been recently formed at Val-de-Grace, the professorship was conferred upon him.

In 1798 M. Larrey departed for Egypt; and during the several years that this expedition lasted, we know how much glory, how many treasures of science, were accumulated. After this campaign Larrey published a treatise, which, like the works of Ambrose Paré, whom he closely resembled, will long bear the test of time.

In 1802 M. Larrey was named surgeon-in-chief of the guard of consuls, and two years after was included in the first promotion of officers of the Legion of Honour. He was successively appointed inspector-general of the Board of Health, and surgeon-in-chief of the Imperial Guard; and in 1812 received the title of surgeon-in-chief of the entire army.

In the hundred days M. Larrey again undertook active service in the army, and set out for Waterloo, where he was wounded and made prisoner. He was about to be shot, when a young surgeon, placing the bandage over his eyes, recognised his old master.

The government of 1830 found in him the same zeal for the welfare, and devotion to the duties of his country, as when he was in Egypt, at Aboukir, or at the foot of the Pyramids. It is this incessant zeal which we may accuse of having deprived us of this excellent man, who retained to the last his full force and love of doing good. M. Larrey died at Lyon, on his return from Algeria.

In a life so occupied with military affairs, we may wonder how he could find time to write the important works which he has left us, and which have procured for him the title of corresponding member of nearly all the learned societies in Europe. Indeed, we scarcely know which to admire most, the incessant activity of M. Larrey in his military duties, or his industry in collecting observations, and composing works, which form at once a history of military campaigns and scientific memoirs, of the highest interest.

In however high esteem we may hold his scientific and military career, we are bound almost to venerate his moral life, which was one long devotion to public affairs and to humanity. The high opinion which Napoleon entertained of the integrity and ability of M. Larrey, are sufficiently shewn in the following words, addressed by him to Dr. Arnott, at St. Helena. "What man is more brave and deserving than Larrey! How great was the care he bestowed on the army in Egypt, both in crossing the desert, and after the affair at St. Jean d'Acre, and likewise throughout Europe. I have conceived

a high and lasting esteem for him. If the army erect a column as an acknowledgment of the services of any person, it should erect one to Larrey."

The address of M. Breschet concludes with the following words:—"In short, I perceive this recital to have been useless; one word should have been enough; it is in itself an elogium, and stamps Larrey with the seal of immortality;—that word was pronounced by the greatest genius of modern times, who, speaking of this illustrious surgeon, said 'c'est l'homme le plus vertueux que j'aie connu.' Let us erect to the honour of Larrey and of our profession, the column of which the Emperor spoke; and let us inscribe thereon the words of Napoleon."—*Discours prononcé sur la tombe de M. le Baron Larrey, au nom de l'Académie des Sciences, par M. E. Breschet.*

### EXTRAORDINARY CASE OF TWINS.

BY WILLIAM JAMESON, M.D.

Assistant Surgeon to Mercer's Hospital, &c.

ON the evening of the 3rd April last, I was called to Fitzwilliam Place, to see Mrs. R. a lady about 30 years of age, the mother of four living children, in consequence of severe pain experienced through the abdomen, which recurred at uncertain intervals, lasting generally about five minutes at a time.

These pains commenced in the morning after breakfast, but in consequence of their becoming more severe, and dreading inflammation, she sent for me.

When I arrived she was in bed, her pulse a little accelerated, tongue clean, no tenderness discoverable on pressure in any part of the abdomen, which felt full, but being seized during the examination with pain, I then distinctly discovered a firm, hard tumor, that reached as high as the umbilicus, but became softer on the subsidence of the pain, and which appeared to me to be a gravid uterus. On applying the stethoscope over the tumor, after some difficulty I thought I heard a placental murmur in the right iliac fossa, but no foetal heart anywhere, and suggested the possibility of her being with child, and then in labour. This, however, she considered to be impossible, as she had been confined so recently (seven weeks) of a child she was then nursing. A vaginal examination was refused; I found, however, on inquiry, that she had had a slight red discharge from the vagina during the latter part of the day, which she considered menstrual.

As I was convinced the tumor was the uterus, and that it was acting to get rid of something or other, I ordered an oil draught, and quitted the apartment in order to explain to the husband my views of the case, viz.

that there was some foreign body in the womb, which in all probability would soon be expelled.

While we were thus conversing on the subject, I was hurriedly summoned to my patient, who told me there was something coming from her. On making the examination during the pain I found the head of a small child presenting with the membranes complete, and on the recurrence of another pain, the child, membranes, and placenta, were expelled altogether. I immediately opened the bag containing very little liquor amnii, and found in it a dead male child, at about the sixth month of gestation: shrivelled and dark, but not at all putrid or decomposed, between eight and nine inches long. The cord was small, easily giving way under the fingers: but the placenta appeared to be fully as large as one belonging to a full-grown foetus, and healthy. Indeed I have often met with a smaller one at the full period. The uterus now contracted well. I placed a binder round the abdomen, administered an opiate, and never saw a more astonished female.

The account I received was as follows. It appeared that she had had four previous confinements without any untoward circumstances, each labour being generally complete in a few hours. That the youngest of them was a boy then only seven weeks old, having been born on the 13th February last, which she was nursing. That she had been attended by a midwife at her residence in the county of Wicklow (her usual medical attendant being out of the way when sent for); that on that occasion her labour went on much the same as usual, having been completed in four hours; that the after-birth was thrown off about ten minutes after the birth of the child, without any subsequent hæmorrhage; and that she recovered and was able to go about her domestic arrangements as soon as on former occasions; but she remarked that her size had not much decreased, which she imputed to bad swathing of the abdomen. That her general health was good; had as much milk as usual, and the only thing that annoyed her was her size, which she considered a natural consequence to her situation, as she always got fat while nursing.

That the last time she menstruated was in the latter end of the month of April, 1841, and as she had been confined on the 13th of February last, forty-two weeks must consequently have elapsed between the last period of menstruation and the birth of the child.

The above case I consider one of great interest, whether viewed, in the first place, as regards the size of the child, it being as large as a child at the sixth month; the circumstance of its having been carried forty-nine weeks (within three weeks of twelve months) after the last act of menstruation, and remaining for such a length of time



after its growth was arrested in utero without becoming decomposed; the labour pains ceasing after the birth of the first, and no inconvenience arising from, or suspicion of anything remaining in the uterus after that accouchement. All these are points, I say, of great interest. Secondly, to view it as a case of superfœtation, or as one of common twins, in which the first was expelled under ordinary circumstances at the full period; then all labour pains have ceased, and an ignorant woman being in attendance, who did not know whether a second child remained behind or not, from the feel of the abdomen, while a second did not only exist, but was carried for seven weeks afterwards without any suspicion of its existence.

I am fully aware that many practitioners have met cases (a similar one of which occurred with myself) of abortion having taken place in twins, where one ovum was expelled, and that notwithstanding the female has gone on progressively increasing in size, and in a few months, as the case might be, brought forth a living child at the full period. Other instances again, of twin cases, in which one child has gone on to the full period, and been healthy and full grown, while its companion in utero has been blighted at a very early period (a beautiful preparation illustrative of which we have preserved in Coombe Hospital Museum), and been expelled at the same labour, giving rise to the idea of superfœtation, or of a woman having conceived again while she was pregnant, from the circumstance of the child not being putrid, some erroneously imagining that a dead child cannot be carried for any length of time without being found in that state.

But I am not aware of any instance in which a woman was pregnant of twins (evidently the case here), where, at the full period, labour set in, and went on healthily, expelling one child alive, while another, dead, was retained and held in the womb for seven weeks afterwards.

The retention of the placenta is also a matter deserving of attention: why was there not hæmorrhage after the birth of the living child, inasmuch as the presence of the expelled contents prevented uterine contraction to have gone on sufficiently for that purpose. The only answer I should give to this is, that the ovum remaining in the womb, and of a sufficient size, must have pressed against the surface to which the other placenta was attached, and in that way have saved the patient.—*Dublin Journ. of Med. Science.*

## HYDATIDS IN THE BONES OF THE PELVIS.

A LABOURER, aged 42 years, had suffered in his youth from repeated attacks of swelling

of the cervical and axillary glands. For five years he had been affected by syphilis, suffering under gonorrhœal sores on the glans, and buboes. In the year 1833 he experienced periodical pains in the left hip, which were at first supposed to be rheumatic. These increased to such a degree that he could not bear the least pressure on the part, and were especially severe at night, in the loins and left hip. He was admitted into the hospital at Vienna in March 1834. At this time the appearance of the patient betokened severe suffering: the pulse was quick; the appetite lost; and nights sleepless. The left hip was swollen, and several whitish immovable swellings, of the size of a chicken's egg, were perceived in this situation. The thigh was flexed upon the pelvis, and any attempt to straighten it was attended with a great increase of pain, as was also every endeavour of the patient to move himself, or turn in bed. After his admission, cold applications were applied, with occasional abstraction of blood by leeches, and three moxas, which had the effect of reducing the swelling, and diminishing the pain a little; but very little increase in the mobility of the limb followed. Subsequently diarrhœa, with hectic, followed, and the patient sunk in May 1834.

On post-mortem examination, the left os innominatum was found swollen and soft. The upper part of the ilium was degenerated into an oblong osseo-fibrous sac, which was filled with fragments of bone and hydatids, varying in size from a hemp-seed to a walnut. Even the cells in these fragments of bone were stuffed with hydatids. Connected with the pelvic bones were projections of the size of a walnut, or hen's egg, which proved to be cavities formed by the expanded walls of the bone, and the thickened periosteum, or bounded by the latter alone. Some of these projected into the cavity of the pelvis, forming bags, communicating with the cancellous texture of the bone by larger or smaller apertures. They contained irregular plates of bone, of various sizes, and hydatids, with firm transparent walls, differing in size from a scarcely perceptible grain of sand, to a hazelnut, which lay loose between the fragments of bone, sometimes one hydatid occupying an entire cell; at others, several were grouped together, and connected with the fine membrane which lined the cavity of the bone. The hip-joint was also swollen, and a section of the capsular membrane showed that hydatids were contained within it.

This case, taken in connection with others of a similar nature, related by Fricke and Cullerier, renders it probable, in the author's opinion, that the disease was connected with the syphilitic taint which existed in the system.—*Oppenheim, Zeitschrift für die Gesamte Medicin.*

## DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, September 13, 1842.)

	PRICE.						DUTY and 5 per cent.	DUTY PAID.	
	£	s.	d.	£	s.	d.		Same time in 1841.	In 1842 to last week
Aloes, Barbadoes, D.P. .... c	10	0	0	to 25	0	0	} B P. lb 0 1 F. lb 0 2	116,154	109,909
Hepatic (dry) BD. .... c	5	0	0	10	0	0			
Cape, BD. .... c	1	14	0	2	16	0			
Anise, Oil of, ....							lb 1 4	2,114	900
E. I. .... lb	0	6	0	0	6	3			
Asafoetida, B.D. .... c	1	10	0	3	0	0	c 1 0	53	39
Balsam, Canada, D.P. .... lb	0	1	6	0	1	8	lb 0 1	1,524	1,314
Copaiba, BD. .... lb	0	1	3				c 4 0	293	378
Peru, BD. .... lb	0	4	6		5	0	lb 0 3	977	725
Benzoin (best) BD. .... c	25	0	0	50	0	0	c 1 0	54	65
Camphor, unrefined, BD. .... c	12	10	0	13	0	0	c 1 0	256	486
Cantharides, D.P. .... lb	6	1	9	0	2	0	lb 0 3	16,517	12,665
Caraway, Oil of, D.P. .... lb	0	8	0				lb 2 0	674	1,311
Cascarilla or Eleutheria Bark, D.P. c.	1	10	0	3	0	0	c 1 0	81	201
Cassia, Oil of, BD. .... lb	0	7	6				lb 1 0	4,571	2,546
Castor Oil, East India, BD. .... lb	0	0	4	0	0	6	c 1 3	} 2,534	5,308
West I. (bottle) D.P. 1½ lb									
Castoreum, American .... lb	0	17	0	0	18	0	} lb 0 6	124	235
D.P. Hudson's Bay .... lb	0	18	0	1	6	0			
Catechu, BD. Pale .... c	0	13	0	0	14	0	} t 5 0	41,628	25,795
Dark .... c	0	10	6	0	11	0			
Cinchona Bark, Pale (Crown) .... lb	0	2	0	0	3	6	} c 1 0	472	479
BD. Red .... lb	0	2	0	0	4	0			
Yellow .... lb	0	1	9	0	2	6			
Colocynth, Turkey .... lb	0	1	6	0	2	9	} lb 0 1	2,812	10,429
D.P. Mogadore .... lb	0	1	0						
Calumba Root, BD. .... c	0	9	6	1	15	0	c 1 0	200	129
Cubebs, BD. .... c	3	0	0	3	5	0	lb 0 1	51,799	23,222
Gamboge, BD. .... c	10	0	0	22	0	0	c 1 0	47	38
Gentian, D.P. .... c	1	8	0				t 5 0	476	434
Guaiacum, D.P. .... lb	0	0	3	0	1	0	c 1 0	117	59
Gum Arabic, Turkey, fine, D.P. .... c	10	0	0	11	0	0	} c 1 0	75 78	6,569
Do. seconds, D.P. .... c	4	10	0	8	10	0			
Barbary, brown, BD. c	2	5	0	2	6	0			
Do. white, D.P. .... c	4	5	0	2	6	0	} c 1 0	6,260	6,587
E. I. fine yellow, BD. c	2	0	0	2	10	0			
Do. dark brown, B.D. c	1	5	0	1	15				
— Senegal garblings, D.P. .... c	4	10	0				c 1 0	8,946	12,315
— Tragacanth, D.P. .... c	7	0	0	8	0	0	c 1 0	84	81
Iceland Moss (Lichen), D.P. .... lb	0	0	2½	0	0	3	t 5 0	22,40	1,995
Ipecacuanha Root, B.D. .... lb	0	1	3				lb 1 0	7,361	7,209
Jalap, BD. .... lb	0	2	4		2	6	lb 0 1	50,166	32,740
Manna, flaky, BD. .... lb	0	1	6	0	2	0	} lb 0 1	8,240	8,512
Sicilian, BD. .... lb									
Musk, China, BD. .... oz	1	0	0	3	10	0	oz 0 6	2,240	686
Myrrh, East India, BD. .... c	5	0	0	14	0	0	} c 1 0	159	74
Turkey, BD. .... c	2	0	0	11	10	0			
Nux Vomica, BD. .... lb	0	8	0	0	9	0	c 5 0	132	5
Opium, Turkey, BD. .... lb	0	6	9	0	7	3	lb 1 0	29,794	26,626
Peppermint, Oil of, F. BD. .... lb	0	7	6	0	8	0	lb 4 0	3,400	1,742
Quicksilver, F.D. .... lb	0	4	0				lb 0 1	191,601	312,233
Rhubarb, East India, BD. .... lb	0	4	0	0	7	0	lb 0 3	17,791	18,766
Dutch, trimmed, D.P. lb	0	8	0	0	9	0	} F. lb 0 3	11,590	16,359
Russian, BD. .... lb	0	11	0	0	12	0			
Saffron, French, BD. .... lb							} lb 1 0	2,661	1,366
Spanish .... lb	2	12	0	2	14	0			
Sarsaparilla, Honduras, BD. .... lb	0	1	0	0	2	6	lb 0 1	129,535	88,353
Lisbon, BD. .... lb							} lb 0 6	7,626	5,310
Scammony, Smyrna, D.P. .... lb	0	12	6	1	0	0			
Aleppo .... lb	0	0	5	0	0	6	E. I. lb 0 1	122,942	73,449
Senna, East India, BD. .... lb	0	1	6	0	1	8	} Other sorts 0 1	68,661	49,868
Alexandria, D.P. .... lb	0	1	0	0	1	3			
Smyrna, D.P. .... lb	0	1	0	0	1	3			
Tripoli, D.P. .... lb	0	1	0	0	1	3			

††† B.D. In Bond. — c. Cwt. — t. Ton. — B. P. British Possessions. F. Foreign. — D. P. Duty paid.

## ST. LUKE'S HOSPITAL.

RULES WITH RESPECT TO THE ADMISSION  
OF PUPILS.

1. No gentleman shall be admitted as a pupil who has not studied his profession for four years, or attended the medical practice of a hospital eighteen months.
2. The pupils shall not be allowed to visit the patients, except in the presence of the medical officers.
3. The pupils shall not visit any patient deemed by the physicians to require seclusion, except under special circumstances.
4. That every pupil shall, on his admission, be required to give a promise not to divulge the name of any patient in the hospital, nor to publish any case without the sanction of the physicians.
5. The physicians will require a testimonial of character from some lecturer, to be produced by the gentleman wishing to become a pupil.

## ON THE

## DIVISION OF MEDICAL LABOUR.

*To the Editor of the Medical Gazette.*

SIR,

IN your number for Sept. 9th is another stirring letter from the pen of Dr. Hull, on behalf of the general practitioner of medicine. In this communication he refers, in laudatory terms, to the letter of "A General Practitioner," which appeared in the MEDICAL GAZETTE of July 8th. Dr. Hull, in the case of the "Dr. Omnibus" there narrated, marks his sense of the conduct pursued by the surgeons on that occasion thus:—"The heroes quoted by the 'General Practitioner,' and those formerly of the Aldersgate Dispensary, are the only martyrs on record." With this opinion, and after this testimony of approval coming from such a quarter, it is only just and fair that the profession should know these gentlemen through the medium of your journal. The scene occurred at the Lancaster Infirmary. The surgeons that resisted, and cast out "the marauder" (Dr. Debitu), were Messrs.

T. T. Bateson and T. Howitt.—I am, sir,  
Your obedient servant,  
A GENERAL PRACTITIONER.  
Lancaster, Sept. 20, 1842.

## BOOKS RECEIVED FOR REVIEW.

Mr. Archibald Maxfield's Observations on Ulcers of the Leg, &c. &c.

Ueber die Abhängigkeit der physischen Populationskräfte von den einfachsten Grundstoffen der Natur mit specieller Anwendung auf die Bevölkerungs-Statistik von Belgien. Von Dr. Ferdinand Gobbi. Leipzig and Paris. 1842.

## APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED  
CERTIFICATES.

*Thursday, September 15, 1842.*

C. Cooper, Rawcliffe, Yorkshire.—H. Newman, Kersey, Suffolk.—T. S. Rising, Martham, Norfolk.—J. W. Webb, Pangbourne, Berks.—W. Heygate, West Haddon.

A TABLE OF MORTALITY FOR THE  
METROPOLIS,

Shewing the number of deaths from all causes registered in the week ending  
Saturday, September 10, 1842.

Small Pox .....	13
Measles .....	21
Scarlatina .....	30
Hooping Cough .....	15
Croup .....	7
Thrush .....	10
Diarrhoea .....	48
Dysentery .....	8
Cholera .....	4
Influenza .....	0
Typhus .....	20
Erysipelas .....	6
Syphilis .....	0
Hydrophobia .....	0
Diseases of the Brain, Nerves, and Senses ..	150
Diseases of the Lungs and other Organs of Respiration .....	211
Diseases of the Heart and Blood-vessels ....	8
Diseases of the Stomach, Liver, and other Organs of Digestion .....	96
Diseases of the Kidneys, &c.....	4
Childbed .....	10
Ovarian Dropsy .....	0
Disease of Uterus, &c. ....	1
Rheumatism .....	2
Diseases of Joints, &c. ....	3
Ulcer .....	0
Fistula .....	0
Diseases of Skin, &c.....	2
Diseases of Uncertain Seat .....	118
Old Age or Natural Decay.....	47
Deaths by Violence, Privation, or Intempe- rance .....	19
Causes not specified .....	11
Deaths from all Causes .....	864

## METEOROLOGICAL JOURNAL.

September.	THERMOMETER.	BAROMETER.
Wednesday 14	from 52 to 67	30.13 to 30.15
Thursday . 15	52 69	30.14 30.09
Friday . . 16	47 69	30.05 29.97
Saturday . 17	47 69	29.78 29.73
Sunday . . 18	51 61	29.73 29.66
Monday . . 19	50 62	29.56 29.53
Tuesday . 20	40 58	29.50 29.47

Wind, N. by E. and N. on the 14th; N. and E. by S. on the 15th; N.E. and S.E. on the 16th; S.E. on the 17th; N. and E. by N. on the 18th; S.W. and S. by E. on the 19th; S. by E. and S. on the 20th.

Generally clear till the evening of the 17th. The 18th, cloudy. The 19th, morning clear, afternoon showery. The 20th, generally clear. Rain fallen, .27 of an inch.

NOTICE.—Several communications have been unavoidably postponed in order to conclude the various lectures, and to make room for some papers directly referring to others in previous numbers of the volume.

WILSON & OGILVY, 57, Skinner Street, London.

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